

**DYNAMICS OF
RURAL DEVELOPMENT
ANALYTICAL ISSUES
AND POLICY PERSPECTIVES**

Romeo M Bautista

WORKING PAPER SERIES NO 91-07

August 1991

Philippine Institute for Development Studies

TABLE OF CONTENTS

I.	Introduction	1
II.	Demand-side Effects of Agricultural Growth on Rural Development	3
	A. Evidence from Household Surveys	3
	B. Results of Macro-analysis	4
	C. Comparative Growth Performance	5
	D. Agricultural Income Growth Not Broadly Based	6
	E. Rural Income Growth and Distribution	11
	F. Income Distribution Effect of Technical Change	13
III.	Rural Nonfarm Enterprises, Rural Development and Overall Economic Growth	14
IV.	A Framework for Policy Analysis	17
V.	Agrarian Reform and Rural Nonfarm Enterprises	23
VI.	Price and Trade Policies	29
VII.	Public Investment	33
	A. Physical Infrastructure	34
	B. Human Resources	36
VIII.	Monetary and Financial Policies	38
IX.	Conclusions	46
	References	51

LIST OF TABLES

1.	Indices of Real Wage Rates, 1965-80 (1972 = 100)	8
2.	Real Agricultural Wage Rates, by Major Crop, 1974-80 (Pesos per Day; 1978 Prices)	9
3.	Average Rural Household Income, Average Rural Household Expenditure, and Agricultural Terms of Trade, 1957-85	12
4.	Distribution of Rural Employment by Sector, 1965-89 (In Percent)	18
5.	Relationship of Value-Added per Farm Area to Farm Size, 1960	24
6.	Farm Size, Average Yield, and Labor Use per Hectare (IRRI Surveys)	26
7.	Indicators of Human Resource Development, 1965, 1980 and 1988	37
8.	GDP per Capita, Literacy Rate, Infant Mortality Rate, and Life Expectancy in 1980, by Region	39
9.	Comparative Annual Interest Rates on Fully-paid Informal Loans from Various Studies (In Percent)	42
10.	Transaction Costs of Lending by Institution and by Activity and Size of Recipient (Percent of Outstanding Loan in Each Category).	45

LIST OF FIGURES

1.	A Framework for Policy Analysis of RNEs	20
2.	Direct Effects of the External Environment	22

DYNAMICS OF RURAL DEVELOPMENT: ANALYTICAL ISSUES AND POLICY PERSPECTIVES*

*Romeo M. Bautista***

I. INTRODUCTION

Rural development as a social goal has long been given major attention by politicians and policymakers in the Philippines. This is reflected in the concern frequently expressed about rural problems and the plethora of laws and institutions that have been created to deal with them.¹ There has also been a general recognition of the widespread poverty in rural areas and its relationship to the country's long history of agrarian dissidence. While past national development plans were heavily influenced by aspirations to industrialize rapidly, they never failed to mention the need to raise agricultural productivity and rural income. However, it is only in the most recent development plan (for 1987-92) that rural development is viewed in a macroeconomic context and its linkage to overall economic growth given some emphasis.²

The dominant production activity in the rural sector is of course agriculture. Rural development is part of the process of "structural transformation" characterized by a diversification of the economy away from agriculture. This process is facilitated by rapid agricultural growth, at least initially, but leads ultimately to significant declines in the share of agriculture to total employment and output and in the

*Prepared for the Consultation-Workshop on the Dynamics of Rural Development (DRD) organized by the Philippine Institute for Development Studies (PIDS), held on August 30-31, 1991 at Ternate, Cavite. The workshop is part of the DRD Research Program funded under the Technical Resources Project of the United States Agency for International Development (USAID) and coursed through the National Economic and Development Authority (NEDA).

** Research Fellow, International Food Policy Research Institute, Washington, D.C., U.S.A.

1. See, for example, Castillo (1983) for a stimulating discussion.

2. NEDA's Medium-Term Philippine Development Plan, 1987-92, was substantially influenced by the "yellow report" (Alburo *et al.* 1986) prepared by a group of Filipino social scientists under PIDS auspices.

proportion of the rural population to total population (Johnston 1970). The "dynamics of rural development" represents a key element of the overall development process that can provide the basis for a self-sustaining and equitable economic growth. Rural development as such is not an end in itself but a means to an end. The same can be said of agricultural growth, which almost necessarily is a precondition to rural development.³

The general objective of this paper is to contribute to the understanding of the links among conceptual, empirical, and policy issues relating to agricultural growth, rural development, and overall economic growth in the Philippines. More specifically, the paper aims to provide a broad analytical guidance and policy perspective for deeper investigative studies on specific aspects of those issues and their interactions. In view of the significance of relevant developments in the Philippine economy since 1965, the post-1965 experience is used for empirical illustration.

Section II discusses the nature of the interactions between agriculture and rural nonfarm enterprises (RNEs, defined here to include both formal and informal nonagricultural production activities in the rural sector), focusing on the demand stimulus generated by agricultural growth. That rapid agricultural growth does not automatically translate into rural development and self-sustaining economic growth is well demonstrated by the Philippine experience during the green-revolution period 1965-80. Several factors bearing on the distribution of income gains from agricultural growth, a principal determinant of the magnitude of rural growth linkage effects, are examined, and these are related to the observed changes in average rural income and income inequality among rural households.

Section III describes the role of RNEs in rural development and the effects of rural industrial growth on the development process as a whole, bringing out the contrasting experiences of Taiwan and the Philippines. In Section IV an overall framework for policy analysis of the determinants of RNE growth is presented. Four major aspects of the policy environment and their influences on the economic performance of RNEs are discussed in turn, namely, agrarian reform (Section V), price and trade policies (Section VI), public investment (Section VII), and monetary and financial policies (Section VIII).

Concluding comments are given in Section IX, including some suggestions for future work.

3. "Almost necessarily," since it is possible that a small agrarian economy newly opened to foreign trade can shift and mobilize resources (including foreign resources) to nonagricultural production that caters mainly to the world market.

II. DEMAND-SIDE EFFECTS OF AGRICULTURAL GROWTH ON RURAL DEVELOPMENT

In any developing country in which agriculture is the predominant sector, agricultural growth is a vital precondition for rural diversification and development. Increases in agricultural output stimulate the demand for production-related products (like fertilizer and farm equipment) from the industrial sector and expand the supply of agricultural products used as inputs (in particular, raw materials) to nonagricultural production. These two types of production linkage are referred to as "backward linkage" and "forward linkage," respectively. Agricultural production is generally characterized by a "weak" backward linkage, especially with respect to the rural economy, and "medium-strong" forward linkage, and this has been borne out by the findings of a study on the Philippines using the 1965 Input-Output Table (ILO 1974: 659-73). In this respect Hirschman's (1958: 110) view that agriculture can generate less stimulus than manufacturing to production in other sectors is valid in the Philippine context.

Apart from the linkage effects on the production side, however, agricultural growth also raises the real income of rural households and hence their consumption demand for food and other agricultural products as well as industrial consumer goods and services. Such "consumption linkages" set in motion a sequence of employment and income multiplier effects that cuts across the rural and urban sectors. Since the pioneering contribution of Mellor and Lele (1973), there has been growing recognition that this source of intersectoral linkages is critical to the extent and nature of the influence of agricultural growth on the overall development process.

A. *Evidence from Household Surveys*

Based on the survey findings of Philippine studies as reviewed by Ranis, Stewart and Reyes (1989), "rural nonagricultural employment is dominated by consumption-linkage activities" (p. 60) and agricultural growth leads to the "expansion of employment in absolute terms ... (that is) significantly the highest in consumption related activities" (p. 62). The employment growth accounted for by consumption linkages ranges from 63 percent to over 80 percent of the total increase in local nonagricultural employment. The dominance of the consumption linkage effects on rural nonfarm activities over the production linkage effects is largely attributable to the greater labor intensity of consumption-related rural industries.

Gibbs' (1974) survey in Gapan, Nueva Ecija, indicates that nearly 60 percent of total nonfarm employment in 1971 was contributed by RNEs supplying consumer goods and services to the area; public services contributed about one-fourth of the total, and production-related activities only 18 percent. An even lower percentage (6.8 percent) was accounted for by forward and backward linkages in the two towns surveyed in the Upper Pampanga River area by Sander (1979). Employment expansion was understandably much more significant in consumption-related RNEs, accounting for 62.8 percent of the total employment growth during 1961-71 in Gapan and over 80 percent during 1975-79 in the Upper Pampanga river area.

In Malaysia, Bell *et al.* (1982) find that each dollar increase in agricultural income in the Muda region generates an additional 0.8 dollar increase in nonfarm value added in the local economy. Two-thirds of the rise in nonfarm income is associated with the increased demand of rural households for consumer goods and services, and the remaining one-third to the increased demand for inputs to agricultural production. Again, the production linkage is relatively weak.

A major factor contributing to the growth of rural nonfarm activities due to rising consumption expenditure is the increase in agricultural wages, as shown in a study on Thailand (World Bank 1983). The earlier experience of Taiwan also indicates a positive relationship between the agricultural wage rate and rural nonfarm employment (Ho 1979). Indeed, a given increase in income will generate more employment if spent in the purchase of wage goods, which are locally-produced and labor-intensive, than in the acquisition of consumer durables normally associated with nonwage income spending.

A notable finding from a survey of two municipalities in Iloilo is that a greater stimulus to rural nonagricultural production is associated with income growth among the lower-income rural households, owing to the tendency of richer households to spend more on goods produced outside the local area (Wangwacharakul 1984). Moreover, the types of consumer goods demanded by the poor are made in a relatively labor-intensive manner, causing increases in employment, especially of the unskilled, and further income improvement among low-income workers in the second round. As pointed out by Little (1987: 232), the process is "self-reinforcing, in that the use of labor-intensive production methods benefits poor, unskilled workers and their dependents..."

Relatedly, a survey of a rice farming village in Laguna finds that large farmers (with farms of two or more hectares) "owned most of the consumer durables familiar in developed countries, e.g., TVs, stereos, electric fans, etc." (Ranis and Stewart 1990: 31). These are mostly products of capital-intensive, urban-based industries with little backward linkage to RNEs, or they could be imported from abroad. Of course, production in urban areas of other consumer goods can feed back on the demand side to the rural sector through both production and consumption linkages.

B. *Results of Macro-analysis*

There are obviously some further demand ramifications of agricultural growth beyond the local economy. Even in the first-round effects, there are goods produced outside the local economy that will be demanded by farmers and rural households both in production and in consumption. Among the second-round effects, the forward and backward linkages outside the rural economy of increased nonagricultural production, as well as the final demand effects of the increased income, need to be taken into account. Clearly, to be able to capture fully the linkages of agricultural growth, one has to go beyond the effects on the local rural economy.

Invoking the mechanism of agricultural growth linkages with the rest of the economy, it is reasonable to specify, at the aggregate level, that nonagricultural production is a function of agricultural production, among other possible influences. If one focuses on the demand side (considering that consumption linkages are dominant), a logical explanatory variable to include is the volume of exports, representing foreign demand. Based on such specification, a regression estimate of the "growth linkage elasticity" of 1.27 was obtained (Bautista 1990a), indicating that a one percent increase in agricultural production results in more than one percent growth in nonagricultural production. It is notable that higher estimates were obtained for Indonesia (1.35) and Malaysia (1.60), the two other Southeast Asian countries included in the study.

Another approach to the quantitative investigation of the economywide repercussions of increasing agricultural production (generated by an exogenous improvement in agricultural productivity) is employed in Bautista (1986), based on a computable general equilibrium (CGE) model of the Philippine economy. The model gives emphasis to agricultural activities (producing food crops, export crops, and livestock) and their linkage to other production sectors. Also, rural and urban households are differentiated in their income generation and consumption patterns from private companies and government. Simulation analysis of a 10 percent increase in total factor productivity in agriculture, other things remaining the same, indicates significant macroeconomic effects, including those on government income (3.7 percent), total investment (2.6 percent), and national income (2.2 percent). It is notable, however, that the induced rise in rural household income (1.9 percent) is lower relative to the income gain for urban households (3.1 percent), attributable largely to the decline in relative prices of agricultural and food products.

The structure of the model does not make distinctions between small and large agricultural producers and between low- and high-income rural households. As indicated above, the stimulus to RNEs would be stronger if a larger share of the increases in productivity and income went to the smaller farms and lower-income households. Conversely, to the extent that the productivity and income improvements favored the large and the prosperous, the simulation results would have tended to overstate the benefits to the rural economy. The important point is that the distribution of the incremental income generated by agricultural growth is a determinant of the magnitude of growth linkage effects on the rural economy. As emphasized by Shand (1986: 239), who draws on a number of case studies on East and South Asian countries, the various "linkage mechanisms cannot work to their fullest extent unless agricultural growth is sufficiently egalitarian."

C. *Comparative Growth Performance*

The development experience of the Philippines during 1965-80, a period of rapid productivity growth in agriculture, provides a vivid demonstration that accelerated agricultural growth does not necessarily ensure a rapid and sustainable growth of the national economy. The explanation lies in the inequitable distribution of income gains from agricultural growth and the failure to generate rural-based, labor-intensive

industrialization that could have significantly helped (1) absorb the rapid growth of rural labor supply during the period, and (2) provide a basis for broadly-based economic growth.

Agricultural production grew at an average annual rate of 5.6 percent between 1965 and 1980, nearly double the 2.9 percent estimated for the preceding ten years (David *et al.* 1987). The acceleration of agricultural growth can be largely attributed to the widespread adoption of improved technologies (most significantly for rice, but also, due to private investments, for nonruminant livestock and, in the 1970s, nontraditional export crops), the expansion of irrigated areas, and the increased use of current inputs (fertilizer for crops and imported feeds for livestock). The main source of output growth prior to 1965 was increasing cultivated land area; during 1965-80, it was increasing yield that accounted for such growth, with the output-land ratio rising by an average 4.2 percent per year (versus 0.5 percent in 1955-65).

Annual growth rates of agricultural output for 1965-80 were comparable among the Philippines and the three neighboring Southeast Asian countries that are also heavily agricultural, namely, Indonesia, Malaysia and Thailand (Bautista 1991). However, manufacturing growth rates for the same period were much lower in the Philippines (7.5 percent) compared to those in the three other countries (ranging from 10.0 to 12.0 percent). This would seem suggestive of the weaker stimulus generated by the accelerated agricultural growth to rural-based industrialization in the Philippines, and not unrelated to the lower average annual increase in GDP during 1965-80 (5.9 percent) relative to Thailand (7.2 percent), Malaysia (7.3 percent), and Indonesia (8.0 percent).

D. *Agricultural Income Growth Not Broadly Based*

An important consideration in the assessment of the contribution of rapid agricultural growth during 1965-80 to rural development and overall economic performance is that the income gains from that growth had not been widely shared. The reasons are not hard to find. In the first place, the dramatic productivity improvements associated with the green revolution in rice bypassed a large segment of the farming population that did not have access to irrigation water. Although there was widespread adoption of modern seed varieties (Herdt 1987), the new technology was notably much less effective in raising yields where water levels could not be strictly regulated. Irrigation investment expanded tenfold between 1966-70 and 1973-77 (Barker 1985: 124); even so, the proportion of irrigated area to total rice area in the late 1970s was only 25.4 percent in the wet season and 17.7 percent in the dry season--much lower than the corresponding percentages for Indonesia (39.9 and 23.4 percent) and Malaysia (36.2 and 29.9 percent).⁴

The greater availability of the effective subsidies on credit and fertilizer for large producers, as well as the producers' greater access to infrastructure investments (irrigation, electricity and roads), contributed to the bias in the structure of income

4. See Table 11 in World Bank (1990: 24).

growth against small farmers. The effect of low interest rate policy was "regressive because credit allocation became a function of the size of collateral, wealth or political power, rather than ... productivity of credit use" (David 1989: 168). Public sector infrastructure expenditures were also notably concentrated in relatively progressive areas close to primary markets; upland agriculture, in particular, continued to be technologically backward and not easily accessible. As pointed out by David (1987: 1), "benefits from the introduction of new technology (and) investments in irrigation and market infrastructure tend to be capitalized into increasing land values, to the advantage of present (and especially, large) landowners."

Among the poorest of the poor in the Philippines, as in most developing countries, are the landless rural families that depend on wage labor as their main source of income (about 20 percent of all rural households in 1965). It would appear that they also did not benefit much from the accelerated agricultural growth. As shown in Table 1, their real wage rate fell significantly from the mid-1960s to 1974. Subsequently, the "legislated" wage rate (in real terms) for nonplantation workers is seen to have increased; however, agricultural employers have not fully complied with the legislated supplementary payments (cost-of-living and other allowances).

Based on farm survey data collected by the Bureau of Agricultural Economics, crop-specific real wage rates indicate, except in sugarcane, increases in 1975 and 1976 but a continuous decline subsequently to about the 1974 level by 1979 or 1980 (Table 2). Similarly, a series of surveys conducted by researchers at the International Rice Research Institute indicate the following average daily wages (in 1972 pesos): in Central Luzon farms--6.23 in 1966, 5.33 in 1974, 6.26 in 1978, and 5.97 in 1982; in Laguna farms--7.16 in 1965, 6.39 in 1975, 6.15 in 1978, and 6.52 in 1981 (Herdt 1987: 342). By contrast, as Oshima (1985) has shown, the development record of other East Asian countries, most prominently Taiwan and South Korea, indicates rising real wages accompanying rapid productivity growth.

Rapid agricultural growth has had only a limited impact on total labor force utilization. The open unemployment rate averaged 7.0 percent during 1959-64 but which declined to 6.8 percent during 1965-72 (Tidalgo 1976: 187-88). Including the full-time equivalent unemployment of the visibly underemployed (laborers at work for less than 40 hours per week and wanting additional work), the comparative values were 18.1 and 15.7 percent, respectively, implying a rise in average hours worked. Among agricultural workers, average hours worked increased slightly from 42.1 per week in 1963-65 to 42.9 in 1966-69 (Tidalgo 1976: 190). There was little change in the open unemployment rate in the 1970s but visible unemployment even increased from an average 5.6 percent in 1971-76 to 10.9 percent in 1976-78 (Tidalgo and Esguerra 1984: 91).

The aggregate picture just drawn does not of course preclude increased labor use per hectare in certain areas due to the adoption of the new rice technology, as has indeed been observed--with an accompanying decline in labor input per unit quantity of rice produced--in the IRRI surveys in Central Luzon and Laguna (Barker and Cordova 1978: 131).

Table 1
INDICES OF REAL WAGE RATES, 1965-80 (1972 = 100)

	Agricultural wage	Legislated nonplantation agricultural wage ^b	Unskilled labor wage, Metro Manila ^a	Legislated nonagricultural wage, Metro Manila ^b
	(1)	(2)	(3)	(4)
1965	122		103	
1966	128		105	
1967	126		103	
1968	112		112	
1969	113		115	
1970	113		112	
1971	98		104	
1972	100	100	100	100
1973		86	90	87
1974		75	73	71
1975		90	73	79
1976		92	72	86
1977		105	70	95
1978		111	68	97
1979		117		106
1980		119		119

Sources: Calculated from basic data in:

- (1) World Bank (1980);
- (2) and (4) Philippine Statistical Yearbook (1989);
- (3) Central Bank Statistical Bulletin (1978).

Notes: ^a Legislated supplementary payments beginning 1974 not included.

^b Degree of compliance with legislated supplementary payments not known.

Table 2
REAL AGRICULTURAL WAGE RATES,
BY MAJOR CROP, 1974-80 (PESOS PER DAY; 1978 PRICES)

	Rice	Corn	Coconut	Sugarcane
1974	7.74	7.74	9.00	8.19
1975	8.60	8.37	9.57	10.16
1976	10.59	10.35	10.83	9.33
1977	10.57	10.02	10.66	10.68
1978	10.42	9.96	10.18	11.00
1979	9.14	8.86	9.06	9.81
1980	7.95	7.70	8.37	8.65
1981	7.60	6.89	8.58	8.21
1982	7.78	7.38	9.04	9.15
1983	8.37	8.03	9.38	10.01
1984	7.93	6.53	8.41	7.50
1985	8.56	6.26	7.99	7.58
1986	9.03	7.68	8.80	8.20
1987	9.10	7.86	9.92	9.52

Source: Table 31 in Reyes, Milan and Sanchez (1989: 40).

Agricultural labor employment has not been helped by the substantial mechanization of some farm operations, particularly in rice land preparation and threshing. There is ample evidence that the adoption of agricultural machinery has had both labor-displacing and wage-depressing effects without significantly affecting yields (Ahammed and Herdt 1985; Sison, Herdt and Duff 1985). On the supply side of the labor market, the sustained high growth rate of the rural population (2.8 percent annual rate during 1960-80) would have also contributed to the failure of the real wage rate to exhibit an upward trend.

Another significant factor bearing on the distribution on income gains from agricultural growth is the distribution of landholdings. With an unequal distribution of land (and agricultural capital), technological change that increases land rent (and the return to capital) but not the real wage can be expected to worsen the distribution of rural income. As late as 1980, only three percent of all farms in the Philippines were larger than 10 hectares, but they accounted for about one-quarter of the total agricultural land area. In the early 1960s, about a half of Philippine farms were fully or partly owned by the operator, over a third were share-tenanted and the rest were under other forms of tenancy. Reflecting the substantial inequity in share-cropping practices, the net income of owner-operators in the major rice growing region of Central Luzon during 1963-70 averaged about 2.3 times that of share tenants (ILO 1974: 475).

The government implemented a redistributive agrarian reform program, Operation Land Transfer, that began in October 1972. It was limited to tenanted land, however, so that the landless continued to have no access to land. Moreover, the coverage was limited to rice and corn; the exclusion of farms growing other crops, constituting about half of the total crop land area, further restricted the program's effectiveness in redistributing land ownership and in alleviating rural poverty (Mangahas 1985). Based on census data, the proportion of total farm area that was owner-operated decreased only slightly from 73.9 percent in 1971 to 72.4 percent in 1980 (Hayami *et al.* 1987: 39). Apart from inducing inefficient production shifts toward crops other than rice and corn, the agrarian reform law also had the unsalutary effects of encouraging tenant eviction by landlords and reducing the labor input per unit of land.⁵

The concentration of agricultural income growth was further accentuated by the major presence in the export crop sector of foreign firms engaged in plantation farming and large-scale, capital-intensive processing. An interesting comparison between the Philippine and Taiwanese experiences in the production and exporting of pineapples and bananas indicates a sharp contrast between the "dispersed small holder production and decentralized processing facilities with low levels of capital and technology in Taiwan, and multinational dominated organizations in the Philippines using sophisticated and expensive equipment and securing supplies mainly from large scale farmers or plantations" (Ranis and Stewart 1987: 159). In pineapple processing and canning, for example, the capital-labor ratio for the two foreign companies in the

5. For a systematic discussion, see Hayami *et al.* (1987).

Philippines was estimated to range from two to six times higher than that for the 23 dispersed national firms in Taiwan. Apart from the unfavorable equity effects of capital-intensive production, the linkage of the export crop sector to the domestic economy would have been weakened by the minimal impact on the surrounding countryside and the profit remittances of multinational companies. It is also notable that Taiwanese canned pineapples supplied a lower quality segment of the export market both because of the lack of well-recognized brand names (something that the two principal producers in the Philippines, Dole and Del Monte, have) and because of less even quality. Nonetheless, there was a large and sustained demand for such products in the world market.

E. *Rural Income Growth and Distribution*

An important point is that the acceleration in agricultural growth during 1965-80 did not seem to have been accompanied by commensurate income growth among rural households. Based on FIES (Family Income and Expenditure Survey) data, the average rural household income in real terms increased by 11.2 percent between 1957 and 1961, and by 17.8 percent between 1961 and 1965, as shown in Table 3. After 1965, however, income growth was only 4.5 percent through 1971, even negative between 1971 and 1975, and insignificant from 1975 to 1985. Using a different price deflator, Balisacan's (1991) finding is that the average real income of rural households (in 1978 pesos) grew by 19 percent from 1961 to 1965 and by another 19 percent from 1965 to 1971, subsequently declining by 12 percent from 1971 to 1985. Yet another set of estimates is provided by the ILO (1974: 10)--with 1956 as base year, the constant-price mean income index of rural income is 110 for 1961, 130 for 1965, and 132 for 1971, implying an even lower proportionate increase (1.5 percent) during 1965-71 compared to that given in Table 3. The FIES series has been criticized for undercoverage of income, among other deficiencies; however, as Table 3 also indicates, the average real expenditure of rural households grew much faster during 1961-65 than during 1965-75.

Not only was the growth of rural income unimpressive; income distribution among rural households also appeared to have become more unequal. From 1965 to 1971, the index of quantile inequality rose from 0.38 to 0.41 while the Gini coefficient increased from 0.42 to 0.46, based on FIES data. Balisacan (1991) also finds increasing income inequality among rural households from 1965 to 1971 based on the coefficient of variation (from 0.797 to 0.920) and on the standard deviation of logarithm (from 0.366 to 0.396). These results are consistent, at least in qualitative terms, with the stagnation of wage earnings in agriculture as observed above at the same time that the agricultural terms of trade was improving, with the index (1971 = 100) rising from 77.9 in 1965 to 108.6 in 1975 (Table 3).

It is important to point out that there are potentially serious measurement problems in making intertemporal comparisons of both the average income level and degree of income inequality of rural households based on FIES data. This is in view of the changes over time in the composition of households in the "rural" category. Thus, a particular community might be initially classified as rural, but if it became

Table 3
AVERAGE RURAL HOUSEHOLD INCOME, AVERAGE RURAL HOUSEHOLD EXPENDITURE, AND AGRICULTURAL TERMS OF TRADE,
1957-85

	1957	1961	1965	1971	1975	1985
Average nominal income (pesos)	989	1,203	1,755	2,818	4,745	21,875
Average nominal expenditure (pesos)	n.a.	1,331	2,142	3,700	5,543	n.a.
Consumer price index	48.1	52.6	65.1	100.0	181.1	833.9
Average real income (1971 pesos)	2,056	2,287	2,696	2,818	2,620	2,623
Percentage change	-	11.2	17.8	4.5	-7.0	0.1
Average real expenditure (1971 pesos)	n.a.	2,530	3,290	3,700	3,061	-
Percentage change	-	-	30.0	12.5	-17.3	-
Agricultural terms of trade	73.2	72.5	77.9	100.0	108.6	85.0

Source: NEDA, Philippine Statistical Yearbook, 1982 and 1989 based on FIES data; Central Bank, Statistical Bulletin (various issues).

very progressive, the same group of households could, after a few years, graduate into the "urban" category based on FIES definitions.⁶ There is a systematic bias, therefore, toward underestimation of the average income of the original group of rural households in later years; however, the direction of bias in the estimate of income inequality is ambiguous.

F. *Income Distribution Effect of Technical Change*

While the above historical associations are suggestive, they do not isolate the impact of the rapid growth in agricultural productivity from other possible influences on rural income distribution. Timmer (1988: 303) emphasizes that equity issues concerning major technological innovations in agriculture "cannot be addressed satisfactorily by looking only at an individual farm or even at the agricultural sector." There are likely to be significant repercussions in the rest of the economy that will have a further effect on income distribution. One might add, in light of the above discussion, that it is also necessary to take into account the policy environment that helps shape economic decisionmaking among producers, consumers and traders.

In Habito (1987) a Philippine CGE model is used to investigate the economywide effects of neutral technological change in rice production "as might result from research in high-yielding varieties" (p. 19). The model has 14 production sectors, of which seven are agricultural, and 10 household income groups, but does not distinguish between rural and urban households. The simulation results concerning income effects indicate that "the lowest income groups are hurt the most, with middle income groups benefiting the most" (p. 20). The net effect on income inequality among household groups based on an aggregate measure is not examined, however.

Hayami and Herdt (1978) employs a partial-equilibrium market model to analyze the income distribution impact of the new rice technology. A closed economy is assumed, in which any increase in rice output necessarily leads to a lower market price. Not surprisingly, their results indicate that the income gains of small farmers and urban consumers exceed those of large farmers. Indeed, the principal redistributive mechanism in a comparative static analysis, assuming the nontradability of rice, is the reduction in the domestic price of the staple food crop, so that the primary benefit from the adoption of the high-yielding rice varieties would be the increased food intake of small farmers and nonagricultural workers.

As Balisacan and Garcia (1986-87) point out, however, the closed-economy assumption is inappropriate in the Philippine context, inasmuch as the domestic marketing and international trade of rice are heavily regulated by the government, directly influencing the domestic rice price. They argue correctly that the income distribution effect of the new technology is not independent of the government price interventions. Based on the small open-economy framework and alternative

6. A separate issue relates to changes in definitions of rural and urban households adopted by the FIES in certain years. The measurement problem in this case, however, would seem to be relatively minor.

assumptions about output price elasticities and rates of technological progress for the two farm-size classes, their results indicate that

in all cases, the combined effects of technological progress and the generally protectionist price policy in the 1960s and early 1980s showed positive increases in the incomes of both small and large farmers. Except in the 1970s when rice price policy was generally provisionist (i.e., taxed domestic producers), these effects tended to favor large farmers more than small farmers" (p. 8).

There is some evidence (e.g., Hayami 1979) that the new rice technology was scale-neutral, in the sense that comparable gains in land productivity resulted from its application to small and large farms. Even so, the distributional impact was a function not only of the existing sectoral price policy (as the Balisacan-Garcia findings indicate) but also of other aspects of government policy (especially the trade and exchange rate regime, public investment, and credit and financial policies) which, as pointed out earlier, effectively discriminated against small and upland rice farmers. For the full benefits of technological progress to reach these farmers and affect income distribution favorably, it would have been necessary to redress those policy distortions.

To recapitulate, the income gains from agricultural growth during 1965-80 tended to concentrate in the higher-income segment of the rural population. This could be largely attributed to the limited benefits of technological change for small and rainfed rice farms that were accentuated by discriminatory government policies, the large inequality in land ownership and high tenancy rate, the stagnation of real wage rates that was in part due to the rapid growth in rural labor supply, and the dominance of plantation production and large-scale processing in the export crop sector. While more rigorous studies are warranted on the linkages among agricultural growth, the household distribution of income gains, and the marginal propensities to spend on various product categories, it is reasonable to infer from the above discussion that the effect on the structure and growth of rural consumption expenditure was to favor capital-intensive products and imported goods rather than labor-intensive, locally-produced goods. This served to weaken the stimulus, from the demand side, to the growth of RNEs, rural development, and overall economic growth.

III. RURAL NONFARM ENTERPRISES, RURAL DEVELOPMENT AND OVERALL ECONOMIC GROWTH

Rural nonfarm enterprises as defined in this paper correspond to nonagricultural activities producing "Z-goods" whose role in the development of an (initially) agrarian economy has been analyzed in various contexts. The seminal work of Hymer and Resnick (1969) developed an analytical model of a self-sufficient peasant economy under colonial conditions, and showed that the importance of Z-goods, assumed inferior to imported manufactured goods, decreases as opportunities for foreign trade

rise and rural incomes increase.⁷ The model was subsequently applied by Resnick (1970) to the Philippines, Burma, and Thailand, giving explanation to the observed decline of rural industry in these countries during 1870-1938.

Ranis and Stewart (1990) recently called attention to some departures from the Hymer-Resnick assumptions that would invalidate the pessimistic prognosis about rural nonfarm activities. In particular, Z-goods are not homogeneous, and not all of them are inferior. They can be differentiated into traditional and nontraditional products, the latter category being associated with "small modern factories using mechanical horsepower, sometimes using imported technology, and producing modern higher quality products" (p. 4). As such, nontraditional Z-goods are better able to compete with, and are not necessarily displaced by, imported manufactured goods.

Indeed the "East Asian experience" of rural-based industrialization was spawned by the expansion of domestic demand for nontraditional Z-goods that accompanied the growth of agricultural productivity and rural incomes. Rural industry growth in the first round in turn "provided additional impetus for further increases in agricultural productivity, leading to a mutually supportive cycle of agricultural and industrial growth" (Ranis and Stewart 1987: 140).

In Taiwan, a prominent example which in the early 1960s had many similarities with the Philippine economy (in terms of per capita income, production structure, and degree of openness), agricultural production grew at an average annual rate of 4.0 percent annually during 1960-73, which was accompanied by an 8.1 percent annual growth in manufacturing employment and a 7.7 percent annual increase in the real wage rate. Between 1965 and 1973 the agricultural sector expanded by an average 4.8 percent annually, while manufacturing registered an astonishing 21 percent growth rate (Bautista 1990b). Rapid growth of farm output took place despite the resource movement out of agriculture concurrently with rapid industrialization. The output composition also changed from rice and other staples to higher-value products (livestock, fruits, and vegetables), and nontraditional agricultural exports (mushrooms, asparagus, etc.) became important. The agricultural labor force began to decline absolutely in the late 1960s but production continued to increase due to improvements in labor productivity.

The rural-based, small-scale, and labor-intensive character of Taiwanese industrial development is well documented (cf. Galenson 1979). Evidence shows a "preponderance of small establishments in the rural areas." In 1961, 96 percent of rural establishments were classified as "small" (Ranis and Stewart 1989: 141). Based on 1971 data, the average size and capital intensity of RNEs are shown by Ho (1979) to be much lower than their urban counterparts. Contrary to the pessimistic conclusions of the Hymer-Resnick model, the Z-goods sector flourished, its dynamism

7. As shown by Bautista (1971), based on a dynamic model of an agrarian economy with neoclassical production functions, the decline of Z-activities does not depend on the inferiority of Z-goods; also, a deterioration in the external terms of trade, other things remaining the same, leads to a long-run increase in Z-goods production.

and modernization paving the way for rural development and structural transformation of the economy.

Rural industries participated significantly in Taiwan's "export-led growth," initially exporting in the early 1960s manufactured products with high unskilled-labor content. Over time, with the accumulation of human and physical capital, the composition of their exports shifted toward more skill- and capital-intensive products. Like the other East Asian NIEs (newly industrializing economies), Taiwan continued to perform impressively in international markets, despite the increased instability and growing protectionism in world trade since the mid-1970s.

A remarkable aspect of Taiwan's development record is the continuous improvement in income distribution from 1953 to 1980. Based on Kuo's (1983) estimates, the Gini coefficient decreased from 0.558 in 1953 to 0.460 in 1964, 0.318 in 1972 and 0.303 in 1980. This is a departure from the inverted U-shaped relationship commonly postulated between economic growth and income inequality in developing countries, demonstrating the possibility that a worsening income distribution is not an inevitable accompaniment to the growth process, even in the early stage of development. It is a consequence of the (initially) agriculture-led, labor-intensive, and decentralized development process that was greatly facilitated by the growth of rural nonfarm enterprises.

The Philippine development experience during 1965-80 bears no resemblance to the Taiwanese case just described, except for the rapid agricultural growth achieved in both countries. The average annual GDP growth rate of 5.9 percent for the period pales in comparison with that of Taiwan and other Asian NIEs (ranging from 8.6 to 10.1 percent) and that of neighboring Thailand (7.2 percent), Malaysia (7.4 percent), and Indonesia (8.0 percent).⁸ What is worse, Philippine economic growth slowed sharply in the 1980s. Indeed, GDP per capita declined in absolute terms as the economy struggled under a heavy debt-service burden that resulted from the excessive foreign borrowing in the previous decade.

In addition to the failure to sustain growth, the development record of the Philippines is blemished by the uneven sharing of the income gains from growth. The overall distribution of income (including both rural and urban households) has remained highly skewed, reflecting in part the high rates of labor unemployment and underemployment through the late 1970s which worsened in the 1980s.

A related problem is that economic activity and income growth have been highly concentrated in Manila and the surrounding areas. As late as the mid-1980s, Metro Manila accounted for about one-third of the country's GDP and more than one-half of total manufacturing value added. Per capita "gross regional domestic product" in Metro Manila was more than double the next highest, and more than five times the lowest, GRDP posted in the other 12 regions of the country.

8. See Table 1 in Bautista (1990b: 3).

These dimensions of Philippine growth performance would seem to indicate a case of agriculture-led development that failed. The accelerated agricultural growth achieved during 1965-80 did not translate into rapid and sustainable growth of the national economy. The observed gains in national income accrued to only a limited segment of the population, which in turn contributed to the inability to develop rural-based, labor-intensive industries that could have helped absorb the rapid expansion of the rural labor force during the period. The poor performance and underdeveloped state of RNEs in the Philippines are reflected in the continuing small share of manufacturing in rural employment (Table 4). Also, rural manufacturing employment grew by an average of only 0.57 percent annually during 1967-75 and by 2.03 percent during 1975-88 (versus 1.42 and 4.01 percent, respectively, for urban manufacturing),⁹ suggesting again a minimal impact of agricultural growth on rural industry.

The decade of the 1980s witnessed a drastic decline in the agricultural growth rate to an annual average of less than two percent, attributable in part to the marked decline in the international prices of the country's traditional crops (especially rice, sugar, and coconut) since the mid-1970s. Policymakers have recognized for some time now the need to diversify into nontraditional, higher-value crops as well as into noncrop (livestock) production. Moreover, apart from agricultural diversification, there has been some policy interest in promoting "rural-based industries ... (to) provide more jobs to the rural population" (NEDA 1986: 28).

There are of course many factors that can influence the growth of RNEs. The earlier discussion has focused on the demand stimulus to rural nonagricultural production generated by agricultural growth. Most strikingly, unlike in the Taiwanese case, agricultural income gains were concentrated in the more affluent segment of the rural population, weakening the intersectoral (especially consumption) linkages in the local economy that would have given impetus to the growth of RNEs from the demand side.

Additionally, the response of nonagricultural production to the demand stimulus induced by the rise in rural income would be influenced by supply factors. These include government policies and the external economic environment that affect directly or indirectly the relative profitability of RNEs. As is evident from the earlier discussion, various aspects of the policy regime and the international economy have also influenced the magnitude of the demand-side effect of agricultural growth on rural nonagricultural production. These policy-related issues are examined more fully below.

IV. A FRAMEWORK FOR POLICY ANALYSIS

A schematic representation of the main relationships underlying the influence of government policies on the economic performance of rural nonfarm enterprises is

9. See Table IV.4B in Ranis and Stewart (1991: 24).

Table 4
DISTRIBUTION OF RURAL EMPLOYMENT BY SECTOR, 1965-89
(IN PERCENT)

	Agriculture	Manufacturing	Others
1965	73.5	8.0	18.5
1970	71.6	9.1	19.3
1975	73.0	8.6	18.4
1980	67.9	8.0	24.1
1985	66.5	7.3	26.2
1989	63.6	7.5	28.9

Source: Special tabulation from NCSO, Integrated Survey of Households (various years).

given in Figure 1. Shown in the upper boxes are four major types of policy instruments, namely, agrarian reform, price and trade policies, public investment, and monetary and financial policies--admittedly not exhaustive of the means by which governments intervene in domestic markets and affect the development of RNEs; in the Philippine context, however, they appear to be the most relevant. These policies are linked to the "meso economy," represented by markets (product, labor and credit) and infrastructure (physical infrastructure and human resources). Changes in both markets and infrastructure affect RNE decisionmaking through various mechanisms. A distinction is made between demand and supply factors.

On the demand side, consumption and production linkage effects are indicated from households and the product market, respectively. Household incomes and assets, as well as their distribution, are affected by agrarian reform; they are also a function of the physical infrastructure and human resources which are primarily dependent on government investment policy. Furthermore, income is earned by household members participating in any of the three markets.

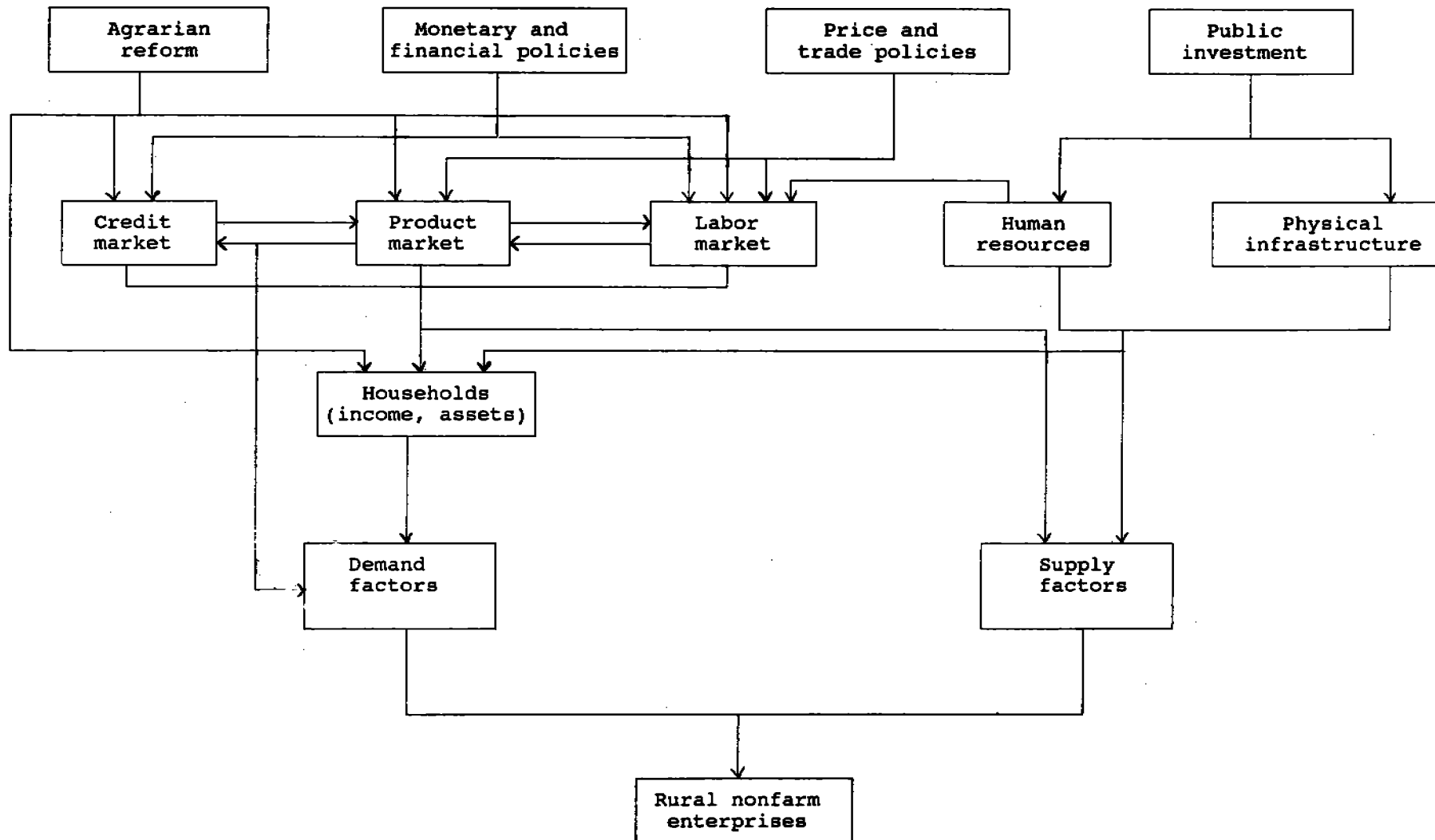
The product market is shown to interact with the credit and labor markets. It can also be affected by agrarian reform through the latter's impact on productivity and the differing expenditure patterns among large and small landowners, tenants, and landless workers. Moreover, it is influenced by price and trade policies directly through import tariffs, export taxes, etc., as well as indirectly through the induced changes in the real exchange rate.

Monetary and financial policies circumscribe developments in the credit market, in terms of both the magnitude of domestic credit made available and its allocation. They also affect the labor market through their influence on the interest rate, a major component of the user cost of capital which in part determines the capital-labor ratio and, hence, the extent of labor employment.

Agrarian reform can lead to significant changes in the credit market, e.g., a shift in the sourcing of informal loans from landlords to traders; also, banks' credit rationing practices may change as the value of land-based collateral declines. With respect to the labor market, if labor is underemployed in small farms and land is underused in large farms, then land redistribution will increase labor employment as well as land use and farm output, provided that the other input requirements (e.g., seeds, fertilizer) are met. Additional influences on labor supply and demand are the level and composition of human capital (a determinant of labor productivity) and the foreign trade regime. As discussed above, exchange rate overvaluation and low tariff rates on imported capital equipment have a distortionary effect on relative factor prices that penalize labor-intensive industries and the adoption of labor-using production technologies; this weakens the demand stimulus to rural nonfarm production through the induced effects on the product market and the purchasing power of rural households.

The supply response of RNEs, on the other hand, is determined by relative price signals from the product, labor, and credit markets, as well as by the availability of

Figure 1
A FRAMEWORK FOR POLICY ANALYSIS OF RNES



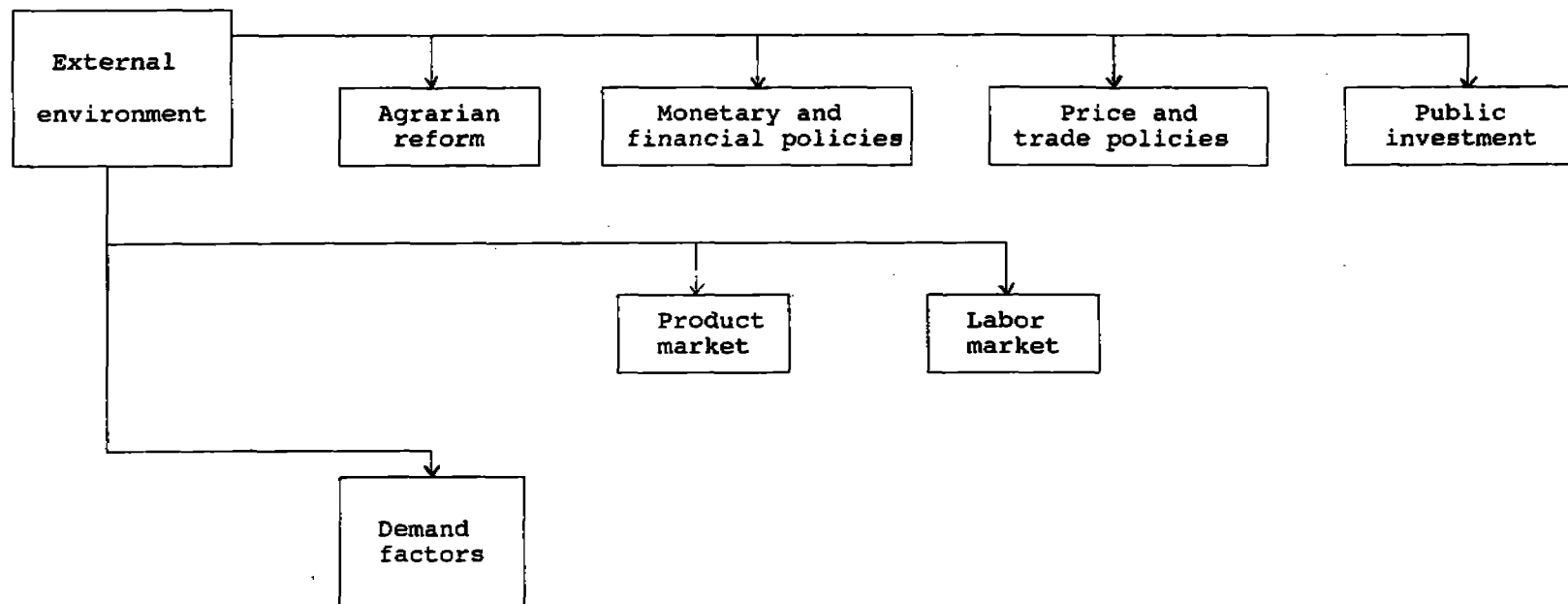
factor inputs--capital and labor skills-- and access to them by rural producers. If the credit market constrains the financing of fixed capital investment and of working capital, or if public investment is distorted against expenditures on health, education, and the development of labor skills in rural areas, the growth performance of RNEs will be hampered. The effects of market changes on rural nonfarm production are also conditioned by the existing physical infrastructure in rural areas, which may or may not permit low-cost marketing to take place. A strong antirural bias in infrastructure policy, for example, is likely to impair the ability of rural producers to respond to favorable price and demand conditions.

The analytical framework represented in Figure 1 abstracts from the possible effects of external developments on various elements of the linkage between government policies and RNEs. Figure 2 indicates some direct influences of the external environment, which can be grafted on to Figure 1 for a fuller representation of the underlying relationships. The external environment can constrain policy choice, and this is especially true in the present context of Philippine policymaking. In particular, the macroeconomic stabilization and structural adjustment programs being implemented by the government effectively limit the scope for policy action. This is obviously the case with monetary and financial policies which, in seeking to restore internal and external balances, are made seemingly unduly restrictive. Also, trade liberalization and associated policies designed to reduce the wedge between foreign and domestic prices are typically a major component of structural adjustment. Lastly, foreign aid can help meet the financial requirements of public investment, such as the massive irrigation projects implemented in the 1970s, as well as augment government resources to defray the cost of implementing the agrarian reform program.

There are also some direct effects of the external environment on the product and labor markets. World price movements get transmitted at least partly to the domestic prices of tradable products, including those of capital equipment which have eventual repercussions on relative labor use. Moreover, export demand for the products of RNEs can significantly add to domestic consumption. This will be given a boost, for example, by a reduction in developed country protectionism in labor-intensive manufactured goods.

The final point to make concerns the importance of policy interaction effects. The supply responsiveness of RNEs to product price increases arising from, say, trade policy reform would depend on the existing infrastructure facilities and other public inputs determined by the government's investment policy, as well as on the cost of financing the expansion of RNEs which in turn is dependent on monetary and financial policies. Similarly, existing price and trade policies can make certain production activities in rural areas so unprofitable that neither additional public investment in infrastructure nor more favorable credit terms will do any good. Also, agrarian reform may or may not lead to the growth of RNEs depending on whether there are accompanying improvements in rural credit and infrastructure.

Figure 2
S OF THE EXTERNAL ENVIRONMENT



V. AGRARIAN REFORM AND RURAL NONFARM ENTERPRISES

Apart from its direct redistributive impact, agrarian reform¹⁰ can affect rural household incomes indirectly through induced changes in the product, labor and credit markets as shown in Table 1, all of which in turn influence the economic performance of RNEs. The magnitude of the income gain to recipients of previously tenanted land is determined in part by the fraction of gross income formerly payable as rent and the amount payable as the annual installment of the purchase price of the land. It is clear, however, that the actual income effect of agrarian reform for this group of rural households would depend also on the accompanying changes in land productivity, product prices and input costs.

A survey conducted by the Bureau of Agricultural Economics (BAEcon) of 525 tenant-recipients of Certificates of Land Transfer (CLTs) in seven municipalities in which Operation Land Transfer was implemented found that the proportion of amortization payments in gross income declined in most locations; in many cases, however, the *absolute* amounts were roughly equal before and after CLT ownership. "The growth in yields accounted for most of the growth in farm income ... (so that) the bulk of the financial benefit to the tenant would come only when the amortization shall have been completed" (Mangahas and Barros 1980: 106).

It should be noted that the yield increases found in the BAEcon survey were associated with multiple cropping, increased use of modern rice varieties and fertilizers, and improved access to credit. The higher productivity of the redistributed land is therefore not necessarily attributable solely to the *land* reform. Productivity-enhancing support services must have played a key role.

The preponderance of evidence, in the Philippines and elsewhere, indicates that agrarian reform has a *neutral* to *positive* impact on land productivity. Some of the results are based on the analysis of pre- and postreform data, attributing the observed changes mainly to the reform program. Other studies compare observed yields among different farm sizes on the assumption that new farms of a given size (after land redistribution) will show the same land productivity as existing ones. Clearly, such assumption is valid only if the various factors affecting yield remain the same after land reform.

Using aggregate data from the 1960 Agricultural Census, Berry and Cline (1979) derived estimates of land productivity for various farm sizes. As can be discerned from Table 5, value added per unit area sharply declines with increasing farm size. Yield differentials are not so significant, however, when distinctions are made among crops, between upland and lowland areas, and between irrigated and nonirrigated farms. For rice farms, Ruttan's (1966) study based on national and regional samples

10. Following common practice, the term "agrarian reform" is used here in the comprehensive sense, including the basic land transfer, or "land reform," and supporting productivity-oriented measures. The distinction sometimes made is between "simple" and "integral" land reform (cf. Warriner 1973).

Table 5
RELATIONSHIP OF VALUE-ADDED PER FARM AREA TO FARM SIZE, 1960

Farm size (hectares)	Number of farms (1000)	Total area (thousand hectares)	Value-added /area (pesos per hectare)
	(1)	(2)	(3)
0 - 0.2	20.0	2.0	9,559
0.2 - 0.5	69.1	21.0	1,388
0.5 - 1	160.7	101.5	811
1 - 2	642.1	795.6	556
2 - 3	458.9	1,000.5	443
3 - 4	252.5	797.0	397
4 - 5	152.4	629.5	359
5 - 10	289.7	1,845.3	292
10 - 15	86.2	964.8	229
15 - 20	13.7	224.7	249
20 - 25	9.3	206.6	215
25 - 50	7.1	232.7	215
50 - 100	2.5	162.9	196
100 - 200	1.2	154.7	143
Over 200	1.0	633.9	82
All farms	2,166.2	7,772.5	331

Source: Table 4-18 in Berry and Cline (1979: 70).

revealed no systematic relationship between output per hectare and farm size, but large farms of at least 10 hectares tended to be associated with lower yields.

No aggregate estimates of comparative land productivity by farm size are available after the widespread adoption of the new rice technology. However, sample data for 325 farms in Nueva Ecija where the modern rice varieties were planted indicated a significantly higher average yield in 1970 for farms of less than two hectares (3.0 mt/ha) relative to farms of more than four hectares (2.2 mt/ha).¹¹ Similarly, the IRRI surveys in Laguna and Central Luzon during 1974-75 involving 125 farms found generally higher land productivities among smaller farms (Table 6).

It also appears that scale economies do not exist in the production of export and cash crops, with the possible exception of sugar. According to Hayami *et al.* (1987: 7), "if small producers are properly organized through contract farming with processing industries, there will be no loss in efficiency corresponding to the breakdown of plantations into family farm units."

The general finding in the wider Berry-Cline study, based on extensive cross-country data and on intensive data sets for six developing countries, is that "the small-farm sector makes better use of its available land than does the large-farm sector" (p. 131) through the application of larger amounts of labor input (mostly family labor) per unit of land. This conclusion is especially significant for countries with a rapidly expanding rural labor supply such as the Philippines.

While there is no aggregate evidence on the relationship between labor use and farm size in the Philippines, Ruttan's (1966) study of rice farms in five barrios in Bulacan for 1963-64 indicates a significantly declining labor-land ratio as farm size increases. The inverse relationship was also found in the IRRI surveys in Laguna and Central Luzon to have been significant during the green-revolution years (cf. Table 6).

One explanation for the higher labor-land ratio in small farms than in large farms relates to the difference in effective labor costs arising from labor-market dualism; that is, the price of family labor to the small farm is lower than the wage rate paid to hired labor in the large farm. This results from the tendency for income-sharing among family workers in small farms, monopsony power by large farms in the local labor market, and other factors.¹² Capital and land market imperfections also contribute to the lower labor intensity of production in large farms relative to small farms. The limited access to low-interest loan sources by small farms, for example, raises the real price of land for them. Moreover, if the acquisition of landholdings is being done not primarily for production but for purposes of prestige or political power, then the large farms will not only produce less output but also employ less labor per unit of land.

11. See Table 4-23 in Berry and Cline (1987: 77).

12. See Berry and Cline (1979) for a fuller analytical discussion and empirical verification.

Table 6
FARM SIZE, AVERAGE YIELD, AND LABOR USE PER HECTARE (IRRI SURVEYS)

	Laguna (62 farms, 1975)			Central Luzon-Laguna (63 farms, 1974 wet season)		
Farm size (hectare)	below 1.6	1.6-2.5	above 2.5	below 1.6	1.6-2.5	above 2.5
Yield (tons/hectare)	3.6	3.8	3.1	2.8	2.1	1.8
Labor use (man-days/ hectare)	118	117	88	95	78	79

Source: Table 11 in Barker and Cordoba (1978: 125).

A striking finding from both regional and national surveys is that land productivity was generally higher in tenanted rice farms than in owner-operated farms (Estanislao 1965; Ruttan 1966). This contradicts the traditional view that resource allocation under share tenancy is inefficient. However, as Hayami *et al.* (1987: 7) point out, "recent empirical as well as theoretical developments have been supporting the hypothesis that the share contract can achieve the same degree of efficiency as the fixed-rent contract and owner farming and that the share contract can be more beneficial for tenants because of its risk-sharing ability and the utilization of landlord-tenant credit relations."

From there it is but a short step to the conclusion that "the artificial limitation on the choice of land tenure contracts such as prohibition of share tenancy reduces both efficiency and equity." This has been the case, unfortunately, with past land reform programs in the Philippines. One adverse consequence was that large landowners were encouraged to evict tenants and to farm their land under their direct administration--which had the further effect of employing less labor per unit of land as agricultural mechanization tended to be substituted for labor use.

The impact of agrarian reform on the credit market is determined by the coverage of the land redistribution and the nature of government support services for land reform beneficiaries. A share-tenant or landless worker who becomes a leaseholder or owner-farmer will lose his traditional and most important source of credit, the landlord. Even if there is likely to be a shift toward other informal credit sources such as local traders of farm products and inputs (cf. Floro 1987), improved access to the formal credit market may be needed, perhaps with emphasis on lowering borrower transaction costs. As past experience has shown, government credit programs to benefit small farmers tend to be ineffective and are difficult to sustain. Alternatively, as Hayami *et al.* (1987: 29) have argued, land reform does not have to exclude totally "the age-old institution of share-tenancy, which is an effective instrument for credit provision, and which agricultural wage laborers prefer to their current status." Also, in the case of export crops, contract farming could be promoted, with the agricultural processing companies providing the cash inputs, extension services, and credit requirements of small farmers.

While there is an extensive literature on the results of land reform to be expected for the beneficiaries and their further repercussions on the local rural economy, much less attention has been paid to the effects on former landlords and how their response can be made supportive of rural development. This suggests a limited appreciation of the potentially significant role of the displaced landowners in promoting the growth of RNEs.

If landowners are given "just" compensation, they can participate in rural nonagricultural activities as investors and entrepreneurs. For example, in Taiwan, landlords "were provided a financial interest in the industrial sector ... (through) the innovative use of land-bank bonds and industrial stocks in financing the land transfers, ... (contributing) to the decentralization of industrial developments" (Dorner and Thiesenhusen 1990: 75-76). To be sure, the latter result was influenced by factors

other than land reform, including a policy climate conducive to the development of labor-intensive industries and their location in rural areas (Galenson 1979).

In the Philippines, the promotion of rural industrialization is a stated objective of both the Operation Land Transfer (under P.D. 27, issued in 1972) and the Comprehensive Agrarian Reform Law (enacted in 1988). The few studies that examined how the compensation to landowners was used, as reviewed by Llanto and Dingcong (1991), do not show any marked tendency toward investment in rural industries. Commercial activities seem to be preferred, including the trading of agricultural products and intermediate inputs. This would reflect the prevailing perceptions on relative rates of return, influenced necessarily by the limited information available to the former landlords concerning industrial investment opportunities. There is a need, then, to provide support services aimed at improving their knowledge of nonagricultural markets in the local rural economy.

Investments in NREs are presumably also a function of the total volume of rural household savings. There is a surprising dearth of studies on the effect of agrarian reform on aggregate rural savings. Adams (1973: 134) reports that both "average and marginal propensities to save among Taiwanese farmers, many of whom were beneficiaries of land reform, were remarkably high," but no comparison is given with the corresponding saving rates for displaced landlords. For the Philippines, the TBAC-UPBRF (1981) study, based on BAEcon farm record-keeping data of 127 farm households, gives estimates of the average (but not marginal) saving rate by tenure group; they range from 0.6 to 13.4 percent for share-tenants, from 10.2 to 19.9 percent for leaseholders, from 16.8 to 21.1 percent for full owners, and from 26.9 to 35.6 percent for amortizing owners. These estimates presumably reflect also the average income levels of the four tenure groups. Bautista and Lamberte (1990) find from an analysis of Family Income and Expenditure Survey (FIES) data for 1985 that the marginal propensity to save out of either permanent or transitory income is comparable between low-income and middle-income rural households, but that high-income households have higher saving rates; there is no strict correspondence, however, between these income classes among rural households and tenurial groups.

It bears emphasizing that relative profitabilities of alternative production activities are shaped to a large extent by the macro-policy environment. Thus, in the 1950s, rich landowners participated actively in the financing and management of large-scale, import-competing industries located in urban areas (chiefly, Metro Manila), and this was stimulated by the sudden profitability in the production of import-substituting products (at the expense of other production activities) arising from the imposition of import and foreign exchange controls in 1949-50. As will be evident in the discussion below of three major aspects of government policy, small-scale and labor-intensive rural industrial producers continued over the years to be discriminated against. Unless the policy biases favoring capital-intensive, urban-based industries are redressed, it is unrealistic to expect that landlords' investible funds and entrepreneurship, with or without land reform, will be directed toward RNEs.

There are at least three implications of the above discussion for the relationship between agrarian reform and the growth of rural nonfarm enterprises. First, land redistribution into small family farms is potentially an effective policy instrument for increasing farm output and employment as well as for improving the distribution of rural incomes. It would thereby enhance the consumption linkage effect on nonagricultural production in the rural economy, giving impetus from the demand side to the expansion of RNEs. Second, these potential benefits of land reform may or may not be realized, depending on the productivity-oriented support measures adopted. For the tenant-recipients of redistributed land to be able to increase farm output and labor use, supply-side constraints such as inadequate price incentives, high cost of credit, and underdeveloped infrastructure need to be overcome. And third, a similar set of favorable supply conditions would be required for RNEs to be able to respond commensurately to the demand stimulus arising from the widely-shared income gains associated with an effective agrarian reform.

In what follows, three important aspects of the policy environment, namely, price and trade policies, public investment, and financial policies, are examined for their effects on RNEs, with special reference to the experience during the green-revolution period 1965-80.

VI. PRICE AND TRADE POLICIES

The growth of RNEs is influenced by price and trade policies from both the demand and supply sides through their direct impact on the product and labor markets (Figure 1). Government market interventions, which can be sector-specific (e.g., the pricing policy of agricultural marketing boards) or economywide (such as the foreign trade regime and exchange rate policy), affect relative product prices, the cost and availability of material inputs, and the real wage rate--all of which have a bearing on the economic viability of RNEs.

Domestic price distortions arising from economywide policies, through the induced effect on the real exchange rate, have been shown in previous studies (e.g., Bautista 1987; Intal and Power 1990) to have penalized agricultural producers more severely than those due to sector-specific policies.¹³ In discriminating heavily against all tradable goods production, the indirect price effect associated with exchange rate overvaluation also served to impede the development of the nontraditional Z-goods component of RNEs producing import-competing and exportable nonagricultural goods.

Moreover, exchange rate overvaluation and low tariff rates on imported capital goods had some adverse repercussions in the labor market. Not only was excessive

13. Despite the substantial antiagricultural price bias of sector-specific and economywide policies, there was an improvement in the agricultural terms of trade from the early 1960s to 1974 owing to favorable trends in world prices of the country's tradable agricultural products. From 1975, however, world commodity prices declined but the negative agricultural pricing policy remained. This resulted in a 26 percent decline in relative agricultural prices from 1974 to 1982 (Bautista 1987: 58).

farm mechanization encouraged (as noted above); they also promoted the growth of capital-intensive industries, mostly based in urban rather than rural areas, to the detriment of labor employment. Thus, even as the share of manufacturing in net domestic product increased from 17.2 percent in 1965 to 24.6 percent in 1980, its contribution to total employment remained at 11-12 percent throughout the period (Table 7). The poor performance of the industrial sector in employment generation, in turn, contributed to the observed lack of an upward trend in real wages (for both agricultural and unskilled laborers), thereby weakening the effective demand for consumer goods produced by RNEs.

The seeds of a long-lasting pattern of inefficient industrial development were planted in the early 1950s when a comprehensive system of direct controls on imports and foreign exchange was imposed as a policy response to a severe balance-of-payments problem. Coupled with the massive overvaluation of the Philippine peso (which kept its prewar exchange rate despite the high wartime inflation), the highly restrictive trade regime spawned the market distortions and rent-seeking activities that over time were not fully dealt with despite some changes in the policy landscape.

As has been well documented (e.g., Power and Sicut 1961), the "essentiality" rule governing the allocation of import licenses and foreign exchange in the 1950s encouraged the establishment of import-competing consumer goods industries in the early years, but effectively penalized backward integration, agricultural production, and exporting. Owing to the artificial underpricing of imported capital equipment and machinery, there was also a significant bias against capital goods production. The chronic trade deficits which became particularly severe during the second half of the decade reflected the inability to stimulate new exports and the increasing reliance of domestic industries on imported intermediate and capital goods.

The gradual lifting of import and foreign controls in 1960-62 did not change qualitatively the incentive structure favoring import-substituting industries because a highly protective tariff system, introduced in 1957 but made redundant at that time by the import and foreign exchange controls, became applicable. Based on the estimates of Power and Sicut (1971), the effective protection rate (EPR)¹⁴ for industrial consumer goods in 1965 averaged 70 percent, much higher than the 27 and 16 percent estimated for intermediate products and capital goods, respectively. For export industries, Baldwin (1975) derived the following average EPRs estimated during 1963-65: -33 percent for traditional exports and -2 percent for new exports; in sharp contrast, the production of import-substituting consumer goods was being protected heavily with an average EPR of 341 percent.

The price competitiveness of export industries was given a boost by the enactment of the Export Incentives Act of 1970. Under this Act, manufacturing

14. The EPR represents the excess of domestic value added in a production activity over its value added at international (border) prices. It includes the protection of outputs and the penalty from the protection of inputs. A high EPR is presumptive evidence of high excess profits, or a high level of inefficiency, or a combination of the two.

enterprises registered with the Board of Investments were accorded various kinds of tax exemptions, deductions from taxable income, and tax credits. In the same year, however, taxes on the major agricultural exports--ranging from four to 10 percent--were introduced, and beginning February 1974, an additional "premium export tax" was applied on the difference between the ruling export price and the base price. Selective financial and infrastructural support was also provided to nontraditional export producers, and this partially compensated for the still pervasive policy bias against exporting. Although certain import controls were lifted, trade restrictions, particularly the protective and distorted tariff system, remained the primary source of this bias. In 1974 the EPR estimates for export-oriented industries averaged only four percent; for the entire manufacturing sector it was still a high 44 percent (compared to 52 percent in 1965), while for agriculture and other primary industries the EPR average was nine percent (Tan 1979).

Restrictions on foreign trade affect relative prices and sectoral production incentives not only through the differential effect on tradable goods prices (as represented in the EPR measure) but also through the effect on the real exchange rate which affects the domestic currency prices of tradable goods relative to nontradables. For example, import duties and quotas directly raise the domestic price of import-competing products relative to exportables, encouraging a shift away from export production. The same policy instruments reduce the demand for exports and, thereby, the price of foreign exchange, making the domestic prices of tradable goods fall relative to nontradables and hence indirectly biasing production incentives against both import-competing and export goods. The restrictive trade regime associated with the industrial protection system therefore doubly penalizes export production.

Overvaluation of the real exchange rate induced by trade policy distortions has been estimated at 44 percent in the 1960s (Bautista 1987). With the adoption of more outward-looking trade policies in the early 1970s, the overvaluation of the Philippine peso arising from trade restrictions was reduced to an average 20 percent through 1980.

Another important source of currency overvaluation is unsustainable deficits in the current account. Macroeconomic policies that lead to such balance-of-payments disequilibrium help defend an overvalued exchange rate (Krueger *et al.* 1988). For example, owing to the large nontradable component of government expenditure, increased public spending is likely to raise the relative price of nontradable goods *vis-à-vis* exportables and importables, inducing domestic resource shifts that can lead to a widening trade deficit. In the Philippines the substantial increases in foreign borrowing and accompanying expansionary demand management during 1975-80 accounted for more than one-third of the total policy-induced real exchange rate overvaluation of 27 percent (Bautista 1987).

Apart from favoring the growth of import-substituting consumer goods industries as indicated above, trade and exchange rate policies contributed significantly to the concentration of industries in urban areas (chiefly, Metro Manila) and the underdevelopment of small- and medium-scale enterprises. This would have added to

the unfavorable supply conditions that inhibited the development of rural nonfarm enterprises.

The heavy reliance on imported material inputs and capital equipment fostered by the import-substitution policies in the 1950s and 1960s created a strong inducement to locate plants near the source of supply, Manila (the principal port), which in turn stimulated the development of nearby areas through agglomeration economies and spill-over effects (Pernia *et al.* 1983). Moreover, Metro Manila was the principal market for the import-competing industries that benefited from heavy protection and exchange rate overvaluation. The more geographically scattered resource-intensive industries were not favored by those policies. It is worth noting that, despite additional fiscal incentives to locate in certain designated (less developed) areas, more than three-fifths of the 590 new enterprises that registered with the Board of Investments during 1968-74 were based in Metro Manila and the Southern Tagalog region (World Bank 1976: 238). The inability of other regions to substantially expand manufacturing production significantly contributed to the persistence of large disparities in regional per capita incomes, as argued by Moran (1978). The regional bias in location choice would have also influenced the large-scale and capital-intensive character of Philippine industrialization to the extent that manufacturing establishments were drawn away from the small local markets and low-cost labor in the outlying regions.

The trade policy bias toward large-scale manufacturing is reflected in the differential incidence of effective protection. Using Tan's (1979) EPR estimates for 1974, Anderson and Khambata (1981) calculate that about 80 percent of employment in small industries, compared to only 45 percent in large industries, can be found in the "underprotected" sectors (defined to include those with EPRs of less than 25 percent). "Indeed 68 percent of those employed in small industries are in sectors with negative EPRs" (p. 121). Earlier studies (ILO 1974; Bautista 1979) have also documented cases of low effective protection for a small-scale, labor-intensive industry (garments, leather products) that had to rely on a costly and inferior material input (textile, leather) produced locally by a highly protected, large-scale, and capital-intensive industry.

Compared to other countries at a similar level of per capita income, large-scale manufacturing in the Philippines has been judged to be well developed and the "unorganized" sector (consisting of establishments with less than five workers) to be very large and inefficient in capital use (ILO 1974: 540). This dualistic structure is presumably related to the general inability of the informal RNEs to transform themselves into modern small- and medium-scale enterprises, which again is to be expected from an industrialization process biased toward capital-intensive, Metro Manila-based industries. On this basis, it is understandable that the demand stimulus generated by the rapid agricultural growth during 1965-80 did not elicit a strong supply response from RNEs.

Empirical studies examining the effects of price and trade policies on the industrial sector have neglected to a significant extent the unorganized (traditional, informal) subsector, focusing largely on organized (modern, formal) manufacturing.

Moreover, the "law of one price" is invariably assumed, implying that any change in foreign (border) prices or the exchange rate is transmitted fully to domestic producer prices. This assumption is not necessarily valid, even for urban-based formal enterprises, but especially so for informal enterprises in rural areas where the existing "underdeveloped economic framework," to use the terminology of Myint (1985), leads to "transaction costs" (including transport, marketing, administrative, and information costs) that are higher than in urban areas. Indeed, such "organizational dualism" calls into question the uniform domestic price response to exogenous foreign price and exchange rate shocks frequently assumed across different classes of enterprises.

One implication of the foregoing discussion is the need to investigate how and to what extent price and trade policy changes filter down to RNEs. It could be that the price signals from a devaluation are only partly transmitted to RNEs because of the imperfect functioning of product markets. How reliable are commonly-used price incentive indicators in representing year-to-year movements and trends of actual prices faced by rural producers? Based on Baldwin's (1975) estimates, for example, the effective exchange rate (adjusted for purchasing power parity) rose sharply after the peso devaluation and enactment of the Export Incentives Act in 1970, the proportionate increases during 1969-71 ranging from 19 percent for "essential producer good imports" to 66 percent for "new exports." Did such incentive gains actually accrue to RNEs producing those classes of tradable goods? Also, to what extent were the transaction costs of RNEs affected by the trade policy reform?¹⁵ Similar questions need to be addressed in any future implementation of price and trade policy changes if the dynamics of rural development focused on the growth of RNEs is a major policy concern.

VII. PUBLIC INVESTMENT

The supply response of RNEs to any demand stimulus is a function not only of price incentives but also of the existing rural infrastructure, defined here to include both human resources and physical infrastructure.¹⁶ The development of rural infrastructure improves labor skills, managerial capacity and the work culture, reduces marketing costs for producers, increases the access of consumers to marketable products, and generally contributes to market integration as a basis for the development of a wide range of rural nonagricultural activities.

As indicated in Figure 1, public investment in physical infrastructure and human resources in rural areas directly influences the economic performance of RNEs on the supply side. Moreover, improvements in workers' skills, health, and nutrition

15. Myint (1985) has argued on theoretical grounds that a movement toward a liberalized trade regime will lower the differential transaction costs between the modern and traditional sectors in the economy.

16. An alternative terminological distinction sometimes used is that between "social" and "economic" infrastructure.

accompanying the development of human capital raise labor productivity and wage income, thus increasing the effective demand for RNE products.

The public sector in the Philippine economy has traditionally been very small, characterized by "a low tax effort and inadequate expenditure on infrastructure especially in the rural areas" (ILO 1974: 245). In the 1960s the average annual share of government investment expenditure in GNP was less than two percent. This changed in the 1970s, which saw a rapid expansion of public investment as the government pursued what was touted as a countercyclical policy in response to the recessionary condition in the international economy. Financed by budgetary deficits and public borrowing, the government invested heavily in (a) the energy sector to reduce the country's dependence on imported oil, (b) industrial import substitution in capital-intensive intermediate products, and (c) large irrigation projects to promote rapid diffusion of high-yielding rice varieties. As a result, the overall public investment rate increased continuously, peaking at 8.7 percent of GNP in 1981. Two years later the debt-payment and foreign exchange crisis came to a head, forcing a drastic fiscal retrenchment in the 1980s.

A. *Physical Infrastructure*

The development of physical infrastructure had been relatively neglected in the Philippines. This is indicated by a comparison of road density and household access to electricity with Taiwan, which in the late 1950s was at a comparable stage of development as the Philippines. There were 189 meters of road per square meter area in the Philippines in 1965; Taiwan's road density was more than double at 470. In 1975, only 26.5 percent of Philippine households had access to electricity. As early as 1952, Taiwan already had 33.0 percent of households with electricity, with the figure reaching 99.7 percent by 1979 (Ranis and Stewart 1987: 187).

Government expenditures on agriculture expanded nearly sevenfold in real terms from 1960-61 to 1979-80, with the agricultural share in total public spending rising from 6.2 to 9.5 percent (David 1989: 169). The largest increase was in irrigation investments, whose share in agricultural expenditure climbed from 14 percent in 1960-61 to 52 percent in 1979-80. This reflected the need to provide irrigation water to rice farms, accentuated by the widespread adoption of high-yielding varieties during the period, as well as by the availability of external financing for large-scale irrigation projects especially in the 1970s. Indeed, "irrigation development was perhaps the single most important factor accounting for sustained growth in Philippine rice production throughout the 1970s" (Barker 1985: 124).

Public investment in agricultural research also expanded significantly. Despite its more eightfold increase (in real terms) from 1960-61 to 1979-80, however, government research expenditure in the Philippines in 1980 was found by Pray and Ruttan (1985) to be much lower than that in Thailand, both absolutely (US\$9.5 million vs. \$21.6 million) and as a percentage of agricultural GDP (16 vs. 26). Two possible reasons for this are the greater use of IRRI research output on rice and the more active role of the private sector in research on export crops and livestock in the Philippines.

Of the various categories of public agricultural investment, it would appear that rural roads were given the least attention. Indeed, the very poor condition of the rural road network was widely considered as a major constraint to sustained agricultural growth in the 1980s (e.g., World Bank 1987). Based on the estimates of Intal and Power (1990: 262), the share of rural roads (and bridges) declined steeply from 12.2 percent in 1960-62 to 2.0 percent in 1978-80. Remarkably, about 40 percent of total public investment went into "roads and road transport" during the period. However, Metro Manila and, to a lesser extent, other urban areas received the bulk of the allocation of infrastructure funds.

The neglect of physical infrastructure in rural areas was the mirror image of the urban bias in the government's overall infrastructure policy. This resulted in a highly uneven regional distribution of infrastructure facilities. Luzon, the country's main island where Manila is located, accounted for 74 percent of government infrastructure expenditure during 1971-81 (Ranis and Stewart 1987: 188) and for 86 percent of the installed electrical capacity of the National Power Corporation in 1978-80, of which Metro Manila had 85 percent (NEDA 1982: 578-89). Also, Metro Manila's road density was about nine times higher than in the entire country in the late 1970s, 98 percent of its households had access to electricity versus the 48 percent average for the other 12 regions (PIDS 1990: Table IV-5), and its share of gross value added in "utilities," from the national income accounts, was more than 70 percent.

The more developed the infrastructure in rural areas, the stronger the growth linkages between agricultural and nonagricultural production, other things the same. Indeed, at the regional level, government spending in physical infrastructure is found to be systematically related to private investments and to have "a positive net effect in raising regional incomes" (PIDS 1990: 103). Ranis and Stewart (1987) attribute the rapid growth of rural-based industries in Taiwan to the advanced state and wide dispersion of its physical infrastructure; also, "the rural areas in Taiwan benefit from a more even distribution as well as from higher average levels of infrastructure facilities than the Philippines ... (which explains) ... a large part of the differences in rural industrialization between the two countries" (p. 164).

The underdevelopment of infrastructure and its concentration in urban areas, particularly Metro Manila, represented a supply-side constraint in the linkage effects of agricultural growth on rural nonagricultural production and overall economic growth, reducing the magnitude of employment and income multipliers in the rural, regional and national economies. It is notable that the income levels of Philippine provinces have been found to be significantly influenced by road density (Fredericksen and Looney 1982) and by the percentage of households with electricity (Fredericksen 1985), among other determinants. A large public investment in infrastructure in rural areas would have also induced a more rapid expansion of RNEs, contributing to a more equitable and sustainable growth of the national economy.

B. *Human Resources*

Not only physical capital but also human resources play a significant role in economic growth. Improvements in the education and health of a country's work force have positive effects on labor productivity, entrepreneurial skills, and technological innovation that are crucial to economic efficiency and competitiveness. The role of human resources and manpower development has been emphasized by Oshima (1988) in explaining the superlative growth performance of Taiwan, South Korea, Hong Kong and Singapore relative to other Asian countries. Some studies have provided strong evidence of higher agricultural productivity associated with farmers with four years of primary education compared to those with no schooling, whether or not the complementary inputs necessary for the adoption of improved farming techniques are available (World Bank 1980: 48). Relatively high social rates of return to primary, secondary, and higher education (in decreasing order of magnitude) have also been estimated for low- and middle-income developing countries (Psacharopoulos 1985), admittedly not without conceptual and statistical difficulties. Both education and health are found by Pernia (1990) to be positively correlated with economic performance among 15 Asian developing countries; interestingly, the Philippines and Sri Lanka are the two "outliers" that experienced lower growth rates of GNP per capita during 1965-87 than would be predicted from their initial education and health status.

Based on the enrollment ratios for the three education levels (in percentages of relevant age-group populations), the Philippines has had a headstart in educational progress relative to the three Southeast Asian neighbors (Table 7). Universal primary education seems to have been attained in the Philippines by 1965, at which time only 90 percent of primary school-age children were enrolled in higher-income Malaysia and less than 80 percent in Indonesia and Thailand. In both secondary and tertiary education, the disparities in enrollment rates between the Philippines and the latter countries in the mid-1960s were even wider. Substantial progress was achieved in raising the secondary enrollment rate in the three countries through the late 1980s but this remained lower in each case compared to the Philippines. Nonetheless, questions have been raised about the deteriorating quality of elementary and secondary education in the Philippines, especially within the public school system (Herrin 1990).

The two health indicators--infant mortality rate and life expectancy--show more favorable conditions in the Philippines compared to Indonesia and Thailand in 1965 and 1980; Malaysia had the best achievement, befitting its higher-income status. In the 1980s, the infant mortality rate was reduced the least in the Philippines (20 percent, versus 45 percent in Thailand and about 26 percent in Indonesia and Malaysia). Moreover, in terms of life expectancy, the calculated percentage reduction in the shortfall from the "maximum attainable" (80 years), following Sen (1981), indicates no improvement in the Philippines from 1980 to 1988 while significant progress continued to be made in the three other countries.

On balance, it would seem that human resources did not constitute a bottleneck to economic growth in the Philippines during 1965-80, at least in comparison with the three other Southeast Asian countries. Indeed, the human capital factor might have

Table 7
INDICATORS OF HUMAN RESOURCE DEVELOPMENT, 1965, 1980 AND 1988

	Philippines			Indonesia			Thailand			Malaysia		
	1965	1980	1988	1965	1980	1988	1965	1980	1988	1965	1980	1988
Enrollment rates (percent)												
Primary	113	110	106	72	98	118	78	96	95	90	92	102
Secondary	41	63	68	12	28	46	14	29	28	28	53	59
Tertiary	19	25	38	1	3	n.a.	2	13	20	2	5	7
Infant mortality rate (per 1000 live births)	72	55	44	128	93	68	88	55	30	55	31	23
Life expectancy at birth (years)	55	64 (36)	64 (0)	44	53 (25)	61 (30)	55	63 (32)	65 (12)	60	64 (20)	70 (38)

Source: World Bank, World Development Report (various issues).

Notes: Enrollment rates are for 1987, not 1988.
Numbers in parentheses indicate percentage reduction in the shortfall from 80 years.

compensated for some unfavorable policy and institutional influences on agricultural growth, enabling the agricultural sector in the Philippines to expand as fast as in the three other countries during that period of rapid technological change.

What about the effect on the growth of RNEs and on the overall development of the economy which, as shown already, had been disappointing in the face of rapid agricultural growth? A relevant consideration is the significant regional, urban-rural, and income-class disparities in education and health (cf. Chapter 2 in World Bank 1980). Nearly every adult in Metro Manila was literate by 1980 but in the much poorer regions of Central and Western Mindanao more than one-third of the adult population were illiterate (Table 8). Moreover, the infant mortality rate in the latter two regions was more than 2.5 times that in Metro Manila, and the life expectancy lower by 10.1 years. Unsurprisingly, relatively high education and health status also characterized Central Luzon and Southern Tagalog, the two regions closest to Manila. It would appear likely that such skewness in the distribution of educational and health benefits served to weaken the nonagricultural supply response to the demand stimulus arising from the rapid agricultural growth during 1965-80, reducing also the scope for promoting an equitable and self-sustaining development process for the whole economy.

As Oshima (1988) has argued, what is important is not just past investment in human capital; manpower quality also needs to be continuously developed, in accordance with the growing complexities of agricultural diversification and marketing, as well as with the labor demands of a rural economy in which nonagricultural production is becoming increasingly important. A comparatively poor record of the Philippines in human resource development during the 1980s can be discerned from Table 7 (see also Chapter 7 in Cornia *et al.* 1988), influenced presumably by the continued debt-related economic difficulties and associated sharp cutbacks in government spending. Thus, per capita national government expenditure on social services (mainly education, health, and housing) fell from 83.8 pesos (at 1972 prices) in 1982 to 54.8 pesos in 1984. Moreover, the share of social services in total national government expenditure declined from 26.4 percent in 1982-83 to 19.0 percent in 1988-89. All this does not bode well for the future growth of RNEs and the country's overall development prospects.

VIII. MONETARY AND FINANCIAL POLICIES

The development of RNEs is affected by monetary and financial policies (Table 1) through the credit market in terms of the cost and availability of loanable funds, and also through the labor market in terms of the user cost of capital relative to the prices of other factor services, primarily labor.

In a "repressed" financial regime in which policies are distorted and credit markets are fragmented, an inefficient allocation of loanable funds biased toward large-scale, urban-based enterprises will be effectively promoted, with unfavorable effects on rural credit and savings mobilization (McKinnon 1973). Large companies located

Table 8
GDP PER CAPITA, LITERACY RATE, INFANT MORTALITY RATE,
AND LIFE EXPECTANCY IN 1980, BY REGION

	Relative GDP per capita (Percent)*	Adult literacy rate (Percent)	Infant mortality rate (Percent)	Life expectancy (Years)
Philippines	100.0	83.3	63.2	61.6
Metro Manila	256.1	97.3	44.0	66.1
Ilocos Region	48.6	84.5	57.0	63.0
Cagayan Valley	61.2	79.4	78.3	58.3
Central Luzon	83.9	88.7	48.2	65.1
Southern Tagalog	113.9	85.8	51.6	64.3
Bicol Region	45.5	85.1	64.8	61.2
Western Visayas	89.2	81.8	60.5	62.2
Central Visayas	90.1	76.3	53.3	63.9
Eastern Visayas	42.6	79.2	78.3	58.3
Western Mindanao	61.1	65.7	112.8	51.5
Northern Mindanao	83.5	84.6	94.5	55.0
Southern Mindanao	103.8	81.1	97.6	54.4
Central Mindanao	68.4	64.1	112.8	51.5

Source: PIDS (1990: Tables III.7 - III.9).
NEDA, Philippine Statistical Yearbook, 1985.

Note: * - percent of Philippine average.

in urban centers with collateral and established reputation will have no difficulty in securing loans from banks and other formal credit sources. On the other hand, small-scale enterprises in rural areas will be forced to rely heavily on informal (traditional) loan sources. Revealing the generally high degree of capital market segmentation in developing countries, several surveys indicate that small enterprises obtained financing for less than one percent of their initial investment requirement from formal credit sources (Liedholm and Mead 1986).

Interest rates charged in informal credit markets are widely observed to be much higher compared to those from formal sources. A World Bank (1975) inventory of formal market interest rates in 34 countries for the late 1960s indicates numerous cases of negative real interest rates, reflecting the ceilings on nominal interest rates directly or indirectly set by government on the formal financial system. In the informal credit market, however, real interest rates exceed 100 percent in some cases, with the median rate among the 23 countries in the sample at 40 percent.

Such characterization of credit markets in developing countries represented closely the prevailing conditions in the Philippines during 1965-80. The maximum interest rates allowed by the Anti-Usury Law on secured and unsecured bank loans were 12 and 14 percent, respectively. These were much lower than the market rates, considering that nominal rates of return on industrial investments of 25 percent or more were not uncommon. Savings and time deposits earned interest at six to eight percent (set administratively by the Central Bank) implying a negative real return to bank depositors in the face of an average double-digit inflation rate during 1965-80.

Such "disequilibrium" interest rates, which more or less existed until the financial reform of the early 1980s, had significant effects on the supply of loanable funds and their allocation. The regime of low interest rates impaired the effectiveness of financial intermediation in the economy and inhibited the flow of resources into the formal financial market. Excess demand for loanable funds was created, which could be accommodated only by credit rationing. This led to a system of credit allocation with heavy reliance on collateral and personal connections, effectively discriminating against small investors, especially those located in rural areas. The findings, for example, of a 1972 survey of small-scale producers of garments, furniture makers and metal working concerns reveal widespread difficulty in obtaining both short- and long-term credit from formal sources (ILO 1974: 541-49). The loan portfolio of the commercial banking system consisted predominantly "of collateralized loans (over 65 percent) for large corporate borrowers (over 70 percent)" (Agabin 1988: 6).

It is also notable that less than 10 percent of the loans granted by the Development Bank of the Philippines (DBP) went to small farmers and RNEs. This was despite the existence of a small-industry program at the DBP; lending under this program, moreover, was concentrated in the Metro Manila area, which accounted for more than 40 percent of total loans (Bautista 1981: 72).

Since bank deposit rates were so much lower than the loan rates, banks and other financial institutions enjoyed a wide profit margin, made even wider by the rediscount

privileges liberally provided for many years by the Central Bank. However, entry to the banking system was restricted. There was also little room for existing banks to expand given the regulated interest rates. This induced the growth of financial activity in the less regulated nonbanking areas, as evidenced by the rapid increase in the assets of finance companies and investment houses during the period. These nonbank financial institutions gave higher "money market" rates to depositors but also charged higher effective loan rates. They catered mainly to the short-term credit needs of commercial banks to cover reserve requirements and to the cash flow problems of large companies. Because of the high minimum placement, money market instruments were available mainly to institutional investors, large companies, and wealthy families. Thus, neither the mobilization of rural savings nor the supply of loanable funds in rural areas was affected by the rapid expansion of nonbank financial activities during the period.

Rural producers have had to rely on informal credit sources to meet their financing requirements. As noted by Lamberte and Lim (1987), existing studies on rural credit focus on agricultural loans, unwarrantly neglecting the credit needs of RNEs. A review of earlier studies indicates that about four-fifths of the total value of agricultural loans came from the informal credit market. It was observed to be markedly lower in the mid-1970s--only about 30 percent, which is not surprising considering the massive agricultural credit subsidy that was part of the government's Masagana 99 program during 1973-76.

In a 1978-79 survey done by the Technical Board for Agricultural Credit (1981) in Bulacan, Camarines Sur and Isabela, 82.6 percent of 2,110 loans examined were provided by informal sources (landlords, traders, moneylenders and relatives). While such loans probably did not require any collateral and their repayment schedules were flexible, the interest charged was quite high, in many cases between 100 and 300 percent, averaging 53.5 percent, compared to the prevailing formal market interest of 12 percent. As shown in Table 9, this average for the three provinces was even lower than the corresponding interest rates indicated by the findings for Nueva Ecija (98 percent) and for 18 provinces (82 percent) in two 1957-58 surveys.

Informal loan rates varied by size of farmholdings: large-farm operators in Nueva Ecija were generally found to have benefited from lower rates compared to those paid by small- and medium-farm operators (Swaminathan 1982). Inequitable disparities in interest rates were also observed between developed and marginal farming areas, and among areas of differing degrees of penetration of formal credit sources.

Agricultural loans from formal sources went largely to big landholders. In 1974, for example, farmers owning more than five hectares, representing only 14 percent of all farms, received 72 percent of total agricultural credit. Because the loan rates did not reflect the social scarcity of capital, there was an inducement to use farm machinery and equipment excessively, contributing to the underutilization of the rural labor force and the stagnation of the real wage rate. Such decline in the labor share of agricultural income represented a demand-side constraint to the expansion of RNEs.

Table 9
COMPARATIVE ANNUAL INTEREST RATES ON FULLY-PAID INFORMAL LOANS
FROM VARIOUS STUDIES (IN PERCENT)

Study/Location and year covered	Annual average interest rate		
	Formal (Nominal)	Informal	
		A. Including zero-interest loans	B. Excluding zero-interest loans
Gapud, Nueva Ecija (1957-58)	12.0	98.0	126.8
Sacay, 18 provinces (1957-58)	12.0	82.0	-
TBAC (1978-79)	12.0	53.5	73.7
Bulacan	12.0	32.6	-
Camarines Sur	12.0	50.7	-
Isabela	12.0	83.3	-
TBAC, Nationwide (1981-82)	14.3	48.2	76.1

Source: Sacay, Agabin and Tanchoco. Small Farmer Credit Dilemma, 1985.

Since interest rates did not serve as an allocative tool, the government relied on a variety of instruments to direct credit into "high-priority" activities. A liberalized rediscounting policy during 1974-80 enabled the Central Bank to provide low-cost funds to private banks for lending to investors in preferred areas at concessionary interest rates. Industrial enterprises registered with the Board of Investments under the Investment Priorities Plan were a major beneficiary; unsurprisingly, they were found to have a large-scale, capital-intensive, and geographic concentration (Bautista, Power and Associates 1979). "Indeed the bulk of the rediscount availments were obtained by commercial banks--not for those in the periphery of the economy, but for their usual corporate and fully secured loans" (Agabin 1988: 25).

In an effort to expand the formal credit market to agriculture, the government actively promoted the rural banking system. Rural banks were able to borrow at the Central Bank rediscount window. They also benefited from the lower reserve requirement ratio on deposit liabilities and exercised monopoly power arising from the restriction that each town should have only one rural bank. This entailed a high fiscal cost, however; during 1970-80 rural banks received funds at interest rates of one to three percent while the government was paying the average commercial rate of 13½ percent on its foreign borrowings (Tolentino 1988: 248). Although traditionally oriented to the sugar industry and large rice farmholdings, the rural banking system participated significantly in the provision of noncollateral, low-interest loans to small farmers under the government's Masagana 99 program. However, a combination of factors--bad management, heavy dependence on the government for loanable funds, and the inability to mobilize deposits--led to the closure of many rural banks when the liberal rediscounting policy was changed in the early 1980s.

In 1975 a presidential decree directed all financial institutions to set aside at least 25 percent of their loanable funds for agricultural credit. However, it also gave the alternative of purchasing eligible government securities, which became a popular option. Despite such efforts to promote lending to agriculture, the total amount of agricultural loans decreased absolutely in real terms for the late 1960s to the mid-1970s, and relative to nonagricultural loans through to the end of the 1970s (David 1989: 167).

Based on the above discussion, it can be said that credit and interest rate policies in the Philippines during 1965-80 impeded rural-based industrialization to the extent that investment activities in rural areas were not financed due to the urban bias in formal sector credit allocation, the high loan rates in informal credit markets, and the failure to mobilize rural savings. Within the rural economy government financial market interventions favored the traditional crops, especially rice, relative to nontraditional agricultural products and RNEs, effectively slowing the process of rural diversification and development. Additionally, the large-scale bias of both formal and informal credit sources implied an inequitable distribution of agricultural income gains during the period which would have weakened the demand stimulus for rural nonagricultural production.

The financial reforms in the early 1980s liberalized interest rates and lifted various banking restrictions. The government also moved away from cheap rediscounting policy, effectively ending a long tradition of interest rate subsidies to favored sectors and projects. The increased reliance on market forces in interest rate determination did not lead, however, to a larger flow of loanable funds from the formal market to rural producers. As noted by Magno and Meyer (1988: 2), "it seems that the risk and default conditions surrounding agriculture and indigenous industries have not significantly improved, and therefore, any increase in deposits resulting from interest rate liberalization would not necessarily flow into these sectors."

Rural saving mobilization was achieved to some extent (cf. Blanco and Meyer 1988), but "branches of commercial banks and private development banks have transferred most of the funds mobilized in rural areas to their respective head offices located in Metro Manila" (Relampagos and Lamberte 1988: 3). The continuing reluctance of banks and other formal credit sources to increase their exposure in the rural sector has been cited as justification for the government to maintain the 25 percent agricultural loan quota (described above) and the deposit retention scheme that requires banks to invest 75 percent of their total deposits in the same service area. As argued by Relampagos and Lamberte (1988), however, these market interventions only served to impair the viability of rural financial intermediaries, making it even more unlikely that a sustained expansion of loanable funds to the rural sector can take place.

The government has emphasized, in place of credit subsidies, the system of credit guarantees designed to reduce the risks faced by lending institutions in financing "socially desirable" projects. An assessment of the recent performance of some existing credit guarantee schemes concludes that (a) they did not add significantly to the supply of loanable funds to the rural sector, (b) they entailed much administrative work so that the cost of lending was not actually reduced (despite the lower risk cost), and (c) large, urban-based borrowers were favored by the accredited banks (Magno and Meyer 1988).

The objective of expanding the flow of credit to the rural sector would very likely be better served if public resources were directed to the source of market failure, namely, the higher transaction costs of lending to small, rural-based borrowers relative to large, urban-based borrowers. As estimated by Saito and Villanueva (1981), both the administrative costs and default risk expenses in each of the three types of banks considered were markedly higher for small-scale agriculture and industry than for large-scale industry (Table 10). As long as this is the case, rural producers will continue to be faced with an inadequate supply of loanable funds. If the growth of RNEs is to be encouraged, it is necessary to find ways to reduce the transaction costs of lending to them.¹⁷ Access to credit may not make unprofitable

17. Some recommendations arising from the recently completed PIDS-OSU project, "Comparative Bank Studies in Rural Areas," include the provision of better market information and rural infrastructure, the use of the informal sector in the delivery of formal credit, the linking of financial institutions with self-help groups, the interlinking of markets through cooperatives, the establishment of group-lending programs *à la* Grameen Bank in Bangladesh, etc.

Table 10
TRANSACTION COSTS OF LENDING BY INSTITUTION AND BY ACTIVITY AND SIZE OF RECIPIENT
(PERCENT OF OUTSTANDING LOAN IN EACH CATEGORY)

	Administrative costs	Default risk expenses	Total transaction costs
Small-scale agriculture:			
Rural banks	3.5	2.0	5.5
Development Bank of the Philippines	3.9	3.4	7.3
Private development banks	3.0	3.2	6.2
Small-scale industry:			
Development Bank of the Philippines	3.0	2.5	5.5
Private Development Corporation of the Philippines	3.0	3.7	6.7
Private development banks	4.0	2.3	6.3
Large-scale industry:			
Development Bank of the Philippines	0.5	1.3	1.8
Private Development Corporation of the Philippines	0.2	2.3	2.5
Commerical banks	0.4	1.7	2.1

Source: Table 1 in Saito and Villanueva (1981: 634).

Note: Cost estimates based on financial data for 1977.

RNEs profitable, but the lack of it will likely slow the process of rural development, dimming further the country's overall development prospects.

IX. CONCLUSIONS

The central message that this paper has sought to convey is that the expansion of rural nonagricultural activities is a crucial aspect of Philippine rural development without which the development process as a whole is not likely to be self-sustaining and equitable. Agriculture being the predominant source of income for the rural population, "getting agriculture moving" is necessary to generate the demand stimulus for a decentralized, rural-based industrialization, which is a critical determinant of the country's long-run development prospects. However, agricultural growth is not sufficient, as the discussion above of the country's post-1965 development experience clearly demonstrates.

The impressive growth of agriculture during 1965-80 which was fueled by rapid increases in farm productivity did not provide a strong impetus to the development of RNEs. This was due in part to the concentration of income gains to the more affluent segment of the rural population. The effect on the structure and growth of rural consumption demand was to favor capital-intensive products and imported goods rather than labor-intensive, locally produced goods. At the same time, the macro-policy environment effectively discriminated in favor of large industry and Metro Manila-based enterprises. The supply response of RNEs to the rapid agricultural growth during the period was therefore weak.

The paper has raised some research issues that warrant further investigation. These are reemphasized and given some elaboration in what follows.

First, as pointed out above, the usual indicators of intertemporal performance of the rural sector are technically flawed. This arises from the fact that the physical area of the "rural sector" is, almost by definition, shifting over time. In FIES data a *poblacion* or central district, or even a *barangay* with at least 1,000 inhabitants, having (1) a population density of at least 500 persons or (2) at least six establishments (commercial, manufacturing, recreational and/or personal services), qualifies as an urban area.¹⁸ It is clear that, as population grows and/or economic activity expands over time, an initially rural area (and associated group of rural households or RNEs) will be classified as urban, sooner or later. This is not problematical for purposes of measuring, say, urbanization patterns and trends. However, interyear comparisons of household poverty incidence or shares of manufacturing in total employment in the rural sector are bound to have a systematic downward bias over time.

It would be useful to document the past economic performance of the rural sector (and how it has been influenced by the prevailing policy climate) without the

18. There are some other characteristics used separately in distinguishing between urban and rural areas according to FIES definitions.

intertemporal distortion associated with the FIES urban-rural classification. This can be done by adopting a different definition of the rural economy that precludes changes in the physical area over time. One such definition that seems reasonable would include all areas except Metro Manila, Metro Cebu and a large subset of the chartered cities; the location of RNEs would be in the towns and central districts that link to the surrounding farm villages in both output and input markets. Whether existing data sources (perhaps special tabulations from the FIES and Economic Census) can be tapped and make measurement feasible remains to be seen. Alternatively, one might focus on some regions (e.g., Bicol and Central Luzon) that are predominantly agricultural in the initial year, for which intertemporal data are available. Their comparative economic performance could be analyzed based on a number of possible explanatory factors such as the relevant changes in the meso economy (markets and infrastructure) induced by various government policies.

Another data-intensive research area that needs to be further addressed is the demand pattern of rural households, distinguished by various characteristics (e.g., by socioeconomic class: large farmers, small farmers, tenants, etc.; by income level). It would be useful in intersectoral analysis to be able to break down consumption expenditures, both average and marginal (as income increases), into locally produced goods, products of urban-based industries, and imported goods. This would require especially designed surveys that are more intensive and extensive than those previously conducted.

Empirical analyses of the consumption linkage implications of particular patterns of agricultural growth (e.g., food crops, export crops and livestock as alternative sources of growth) and of how the employment and income multiplier effects on the rural economy can be increased merit consideration. Research is also needed to investigate quantitatively the extent to which income redistribution in the rural sector, with or without an effective agrarian reform, can increase the demand for RNE products. How might direct taxation measures be designed, for example, so as to induce a wider sharing of the income gains from agricultural growth?

Despite the extensive literature on land reform in developing countries, little attention has been given to its consequences on rural nonfarm production. Agricultural productivity and income distribution issues are examined in many studies but the linkage to RNEs is typically not pursued. In the Philippine context this reflects in part a lack of recognition of the wider role of agrarian reform in broadening the domestic market and contributing to a more sustainable growth process for the economy as a whole. There is a need to undertake studies on both *ex ante* and *ex post* relationships between land reform implementation and the growth of RNEs.

On the supply side, it is necessary to inquire on the special constraints faced by RNEs in the markets for output, inputs, credit and information. What policy or institutional factors are responsible for those constraints? What can government do to help RNEs overcome them? Can a given market be made competitive if it is monopolistic, or created where it is missing? For sure, political economy

considerations are important and warrant systematic analysis, in particular, the sources of resistance to policy and institutional reforms need to be identified.

As discussed above, the distortionary effects of past price and trade policies have penalized RNEs by artificially underpricing their output and overpricing their inputs. It would be illuminating to derive estimates of recent-year EPRs for entire industries and to compare the corresponding EPRs (based on survey data) for RNEs. It is necessary to examine whether the higher transaction costs for RNEs in marketing their products make them uncompetitive *vis-à-vis* the large enterprises based in urban areas. To what extent are border price and exchange rate changes transmitted to RNE producer prices? The role of public investment in facilitating the transmission process is obviously important, and needs to be rigorously examined. Also, are there possibilities for improving the institutional setup?

The recent PIDS-OSU project has generated a large body of knowledge and provided important insights on perhaps the most important missing (or at least incomplete) market for rural producers, namely, the credit market. The emphasis, however, has been on agricultural credit. It would be useful to undertake a similar research venture into formal and informal financial intermediation affecting the availability and cost of credit to RNEs in various industries. Analytical studies are needed to examine what forms of government intervention are effective in reducing the transaction costs of lending to and borrowing by RNEs. It would be necessary to understand the nature of the links between formal and informal financial markets, between RNEs and other economic agents in the informal markets, and between consumption and production decision processes within the rural economy.

Another research area that needs to be addressed concerns the market for information. The presence of scale economies in the acquisition of information implies that RNEs are likely to underinvest, foregoing some of the benefits of new information on technology and market developments, at least relative to the large, urban-based enterprises. There is, then, an economic rationale for the government to help finance such investments or perhaps even provide information services directly. How are RNEs being assisted currently in this regard, and how might existing forms of government assistance be improved?

It is also necessary to investigate the influence of external factors on the growth of RNEs, including the direct effects of changes in foreign prices and in access to world markets of labor-intensive manufactured products, as well as the indirect effects arising from institutional and policy reforms such as those associated with the ongoing economic adjustment program.

Finally, as indicated above, there are interaction effects among various aspects of the policy and institutional environment affecting RNEs that need to be evaluated empirically. It would be useful to examine the effects on the economic performance

of RNEs arising from the separate and, alternatively, simultaneous implementation of specific policy and institutional reforms. How might alternative policy packages be ranked (from first-best to n th-best) in their effectiveness in promoting the development of RNEs? Systematic analyses of the successes and failures of specific RNEs in particular industries in the light of existing policies and of their relationship to institutions would also be valuable in terms of the lessons that can be learned and their implications for government action.

REFERENCES

- Adams, D W. "The Economics of Land Reform." *Food Research Institute Studies in Agricultural Economics, Trade and Development* 12 (1973): 133-38.
- Agabin, M.H. "A Review of Policies Impinging on the Informal Credit Markets in the Philippines." PIDS Working Paper Series No. 88-12. Makati: Philippine Institute for Development Studies, 1988.
- Ahammed, C.S., and R.W. Herdt. "A General Equilibrium Analysis of the Effects of Rice Mechanization in the Philippines." *Modelling the Impact of Small Farm Mechanization*, Monograph Series No. 5. Makati: Philippine Institute for Development Studies, 1985.
- Alburo, F.A. *et al. Economic Recovery and Long-run Growth: Agenda for Reforms*. Makati: Philippine Institute for Development Studies, 1986.
- Anderson, D., and F. Khambata. "Small Enterprises and Development Policy in the Philippines: A Case Study." World Bank Staff Working Paper No. 468, 1981.
- Baldwin, R.E. *Foreign Trade Regimes and Economic Development: The Philippines*. New York: National Bureau of Economic Research, 1975.
- Balisacan, A.M. "The War Against Rural Poverty: The Philippines." University of the Philippines School of Economics, April 8, 1991. Mimeographed.
- _____, and M.M. Garcia. "Two Decades of Green Revolution: What Has Happened to Farmers' Income and Consumers' Economic Welfare." *Journal of Agricultural Economics and Development* 16 and 17 (1986-87): 1-18.
- Barker, R. "The Philippine Rice Program--Lessons for Agricultural Development." *Philippine Economic Journal* 14 (1985): 116-31.
- _____, and V.G. Cordova. "Labor Utilization in Rice Production." In IRRI, *Economic Consequences of the New Rice Technology*. Los Baños, 1978.
- Bautista, R.M. "Dynamics of an Agrarian Model with Z-goods." Discussion Paper No. 714, Institute of Economic Development and Research, University of the Philippines, 1971.
- _____. "Domestic Resource Costs in the Leather and Leather Goods Industries." In *Industrial Promotion Policies in the Philippines*, edited by R.M. Bautista, J.H. Power and Associates. Makati: Philippine Institute for Development Studies, 1979.
- _____. "The Development of Labor Intensive Industry in the Philippines." In *The Development of Labor Intensive Industry in ASEAN Countries*, edited by R. Amjad. Bangkok: ILO Asian Employment Program, 1981.
- _____. "Effects of Increasing Agricultural Productivity in a Multisectoral Model for the Philippines." *Agricultural Economics* 1 (1986): 67-85.
- _____. *Production Incentives in Philippine Agriculture: Effects of Trade and Exchange Rate Policies*. Research Report 59. Washington, D.C.: International Food Policy Research Institute, 1987.
- _____. "Agricultural Growth and Food Imports in Developing Countries: A Reexamination." In *Economic Development in East and Southeast Asia: Essays in Honor of Professor Shinichi Ichimura*, edited by S. Naya and A. Takayama. Institute of Southeast Asian Studies, Singapore and East-West Center, Honolulu, 1990a.

- _____. "Poverty Alleviation, Economic Growth and Development Policy in East Asia." Working Paper No. 90/5, National Centre for Development Studies, Australian National University, Canberra, 1990b.
- _____. "Agricultural Growth, Industrialization, and the Macroeconomic Environment in the Philippines." Paper prepared for the Fifth Biannual Conference on United States-Asia Economic Relations, sponsored by the American Committee on Asian Economic Studies and Tokai University, Tokyo, 1991.
- _____, and M.B. Lamberte. "Comparative Saving Behavior of Rural and Urban Households." *Journal of Philippine Development* 17 (1990): 149-81.
- _____; J.H. Power and Associates. *Industrial Promotion Policies in the Philippines*. Makati: Philippine Institute for Development Studies, 1979.
- Bell, C.L.G.; P. Hazell; and R. Slade. *Project Evaluation in Regional Perspective*. Baltimore: Johns Hopkins University Press, 1982.
- Berry, R.A., and W.R. Cline. *Agrarian Structure and Productivity in Developing Countries*. Baltimore: Johns Hopkins University Press, 1979.
- Blanco, R., and R.L. Meyer. "Rural Deposit Mobilization in the Philippines, 1977-1986." PIDS Working Paper Series No. 88-15. Makati: Philippine Institute for Development Studies, 1988.
- Castillo, G.T. *How Participatory is Participatory Development? A Review of Philippine Experience*. Makati: Philippine Institute for Development Studies, 1983.
- Cornia, G.A.; R. Jolly; and F. Stewart. *Adjustment with a Human Face*, Vol. II. Oxford: Clarendon Press, 1988.
- David, C.C. "Economic Policies and Agricultural Incentives." *Philippine Economic Journal* 11 (1983): 154-82.
- _____. "Introduction." In *In Search of a Land Reform Design for the Philippines*, edited by Y. Hayami, M.A.R. Quisumbing and L.S. Adriano. UPLB-APRP Monograph Series No. 1, Agricultural Policy Research Program, University of the Philippines at Los Baños, 1987.
- _____. "Philippines: Price Policy in Transition." In *Food Price Policy in Asia*, edited by T. Sicular. Ithaca: Cornell University Press, 1989.
- _____; R. Barker; and A. Palacpac. "Philippines." In *Productivity Measurement and Analysis: Asian Agriculture*. Tokyo: Asian Productivity Organization, 1987.
- Dorner, P., and W.C. Thiesenhusen. "Selected Land Reforms in East and Southeast Asia: Their Origin and Impacts." *Asian-Pacific Economic Literature* 4 (1990): 65-95.
- Estanislao, J.P. "A Note on Differential Farm Productivity by Tenure." *Philippine Economic Journal* 4 (1965): 120.
- Floro, S. "Informal and Formal Credit Interlinkages in The Philippines." Ph.D dissertation, Stanford University, 1986.
- Fredericksen, P.C. "Electrification and Regional Economic Development in the Philippines." *Journal of Philippine Development* 12 (1985): 409-17.
- _____, and R. Looney. "Road Investment and Regional Economic Development: A Philippine Case Study." *International Journal of Transport Economics* 9 (1982): 335-48.
- Galenson, W., ed. *Economic Growth and Structural Change in Taiwan*. Ithaca: Cornell University Press, 1979.

- Gibbs, A. "Agricultural Modernization, Nonfarm Employment and Low Level Urbanization: A Case Study of a Central Luzon Subregion of the Philippines." Ph.D dissertation, University of Michigan, 1974.
- Habito, C.F. "Intersectoral Linkages and Agricultural Policies: A General Equilibrium Analysis." Makati: Philippine Institute for Development Studies, 1987. Mimeographed.
- Hayami, Y. "Economic Consequences of New Rice Technology: A View for the Barrio." Paper presented at the International Rice Research Institute, Los Baños, Philippines. Agricultural Economics Development Paper 79-05, IRRI, Los Baños, 1979.
- _____, and R.W. Herdt. "Market Price Effects of New Rice Technology on Income Distribution." In IRRI, *Economic Consequences of the New Rice Technology*, Los Baños, 1978.
- _____; M.A.R. Quisumbing; and L.S. Adriano. *In Search of a Land Reform Design for the Philippines*. UPLB-APRP Monograph Series No. 1, Agricultural Policy Research Program, University of the Philippines at Los Baños, 1987.
- Herdt, R. W. "A Retrospective View of Technological and Other Changes in Philippine Rice Farming, 1965-1982." *Economic Development and Cultural Change* 35 (1987): 329-49.
- Herrin, A. "An Assessment of Population, Health, and Education Policies in the Philippines, 1986-88." PIDS Working Paper Series No. 90-10. Makati: Philippine Institute for Development Studies, 1990.
- Hirschman, A.O. *The Strategy of Economic Development*. New Haven: Yale University Press, 1958.
- Ho, S.P.S. "Decentralized Industrialization and Rural Development: Evidence from Taiwan." *Economic Development and Cultural Change* 28 (1979): 77-96.
- Hymer, S., and S. Resnick. "A Model of an Agrarian Economy with Nonagricultural Activities." *American Economic Review* 59 (1969): 493-506.
- Intal, P.S., and J.H. Power. *Trade, Exchange Rate and Agricultural Pricing Policies in the Philippines*. World Bank Comparative Studies on the Political Economy of Agricultural Pricing Policy, Washington, D.C., 1990.
- International Labour Office (ILO). *Sharing in Development in the Philippines*. Geneva: International Labour Office, 1974.
- Johnston, B.F. "Agriculture and Structural Transformation in Developing Countries: A Survey of Research." *Journal of Economic Literature* 8 (1970): 369-404.
- Krueger, A.O.; M. Schiff; and A. Valdés. "Agricultural Incentives in Developing Countries: Measuring the Effect of Sectoral and Economywide Policies." *World Bank Economic Review* 2 (1988): 255-71.
- Kuo, S.W.Y. *The Taiwan Economy in Transition*. Boulder: Westview Press, 1983.
- Lamberte, M.B., and J. Lim. "Rural Financial Markets: A Review of Literature." PIDS Staff Paper Series No. 87-02. Makati: Philippine Institute for Development Studies, 1987.
- Liedham, C., and D.C. Mead. "Small Scale Enterprises in Developing Countries: A Review of the State of the Art." MSU International Development Working Paper, East Lansing, 1986.
- Little, I.M.D. "Small Manufacturing Enterprises in Developing Countries." *World Bank Economic Review* 1 (1987): 203-35.

- Llanto, G., and C.G. Dingcong. "Impact of CARP on Landowners." Paper prepared for the Consultation-Workshop on the Dynamics of Rural Development, Philippine Institute for Development Studies, August 30-31, 1991, Ternate, Cavite.
- Magno, M.T. and R.L. Meyer. "Guarantee Schemes: An Alternative to the Supervised Credit Program." PIDS Working Paper Series No. 88-23. Makati: Philippine Institute for Development Studies, 1988.
- Mangahas, M. "Rural Poverty and Operation Land Transfer." In *Strategy for Alleviating Poverty in Rural Asia*, edited by R. Islam. Bangkok: International Labour Office, Asian Employment Programme, 1985.
- _____, and B. Barros. "The Distribution of Income and Wealth: A Survey of Philippine Research." In *Survey of Philippine Development Research I*. Makati: Philippine Institute for Development Studies, 1980.
- McKinnon, R.I. *Money and Capital in Economic Development*. Washington, D. C.: Brookings Institution, 1973.
- Mellor, J.W., and U. Lele. "Growth Linkages of the New Foodgrain Technologies." *Indian Journal of Agricultural Economics* 28 (1973): 35-55.
- Moran, P.B. "Regional Structure of Philippine Manufacturing, 1948-1974." *Philippine Review of Business and Economics* 15 (1978): 117-42.
- Myint, H. "Organization Dualism and Economic Development." *Asian Development Review* 3 (1985): 24-42.
- National Economic and Development Authority (NEDA). "Regional Development Issues and Strategies on Urbanization and Urban Development." In *Philippine Development Planning Studies*. Manila: Regional Planning Studies Series No. 8, 1982.
- _____. *Medium-Term Philippine Development Plan, 1987-1992*. Manila, 1986.
- Oshima, H.T. "Levels and Trend of Farm Families' Nonagricultural Incomes and Different Stages of Development." *Philippine Review of Economics and Business* 12 (1985): 123-54.
- _____. "Agricultural Diversification in Philippine Development Strategy." *Philippine Review of Economics and Business* 14 (1985): 159-98.
- _____. "Human Resources in East Asia's Secular Growth." *Economic Development and Cultural Change* 36 (Supplement 1988): S103-22.
- Pernia, E.M. "Economic Growth Performance of Indonesia, the Philippines and Thailand: The Human Resource Dimension." Report Series No. 48, Asian Development Bank, 1990.
- _____. *et al. The Spatial and Urban Dimensions of Development in the Philippines*. Makati: Philippine Institute for Development Studies, 1983.
- Philippine Institute for Development Studies (PIDS). *Balanced Regional Development Study*. Final report to the Asian Development Bank, Manila, 1990.
- Power, J.H., and G.P. Sicat. *The Philippines: Industrialization and Trade Policies*. London: Oxford University Press, 1971.
- Pray, C.E., and V.W. Ruttan. "Completion Report of the Asian Agricultural Project." Economic Development Center Bulletin No. 85-2, University of Minnesota, 1985.
- Psacharopoulos, G. "Returns to Education: A Further International Update and Implications." *Journal of Human Resources* 20 (1985).
- Ranis, G., and F. Stewart. "Rural Linkages in the Philippines and Taiwan." In *Macro-Policies for Appropriate Technology in Developing Countries*, edited by F. Stewart. Boulder: Westview Press, 1987.

- _____. "The Dynamics of Rural Development: Theory and Application," 1990. Mimeographed.
- _____; and E.A. Reyes. "Linkages in Development: A Philippine Case Study." PIDS Working Paper Series No. 89-02. Makati: Philippine Institute for Development Studies, 1989.
- Relampagos, J.P., and M.B. Lamberte. "Funds Transfer Operations: Boon or Bane to the Viability of Rural Financial Intermediaries." PIDS Working Paper Series No. 88-22. Makati: Philippine Institute for Development Studies, 1988.
- Resnick, S. "The Decline of Rural Industry Under Export Expansion: A Comparison Among Burma, Philippines and Thailand, 1870-1938." *Journal of Economic History* 30 (1970): 51-73.
- Reyes, E.A.; E. Milan; and M.T. Sanchez. "Employment Productivity and Wages in the Philippine Labor Market." PIDS Working Paper Series No. 89-03. Makati: Philippine Institute for Development Studies, 1989.
- Ruttan, V. "Tenure and Productivity of Philippine Rice Producing Farms." *Philippine Economic Journal* 5 (1966).
- Sacay, O.J.; M.H. Agabin; and C.I.E. Tanchoco. *Small Farmer Credit Dilemma*. Manila: Technical Board for Agricultural Credit, 1985.
- Saito, K.A., and D.P. Villanueva. "Transaction Costs of Credit to the Small-Scale Sector in the Philippines." *Economic Development and Cultural Change* 29 (1981): 631-39.
- Sander, W. "The Upper Pampanga River Project's Impact on Nonfarm Employment and Regional Growth." Discussion Paper 7918, School of Economics, University of Philippines, 1979.
- Sen, A.K. "Public Action and the Quality of Life in Developing Countries." *Oxford Bulletin of Economics and Statistics* 43 (1981): 287-319.
- Shand, R.T., ed. *Off-farm Employment in the Development of Rural Asia*. Canberra: Australian National University Press, 1986.
- Sison, J.F.; R.W. Herdt; and B. Duff. "The Effect of Small Farm Mechanization on Employment and Output." *Journal of Philippine Development* 12 (1985): 29-82.
- Swaminathan, M. "The Study on the Credit Behavior of Farm Families in Nueva Ecija." Agricultural Economics Working Paper No. 82-27. Los Baños: International Rice Research Institute, 1982.
- Tan, N.A. "The Structure of Protection and Resource Flows in the Philippines." In *Industrial Promotion Policies in the Philippines*, edited by R. Bautista, J.H. Power and Associates. Makati: Philippine Institute for Development Studies, 1979.
- TBAC-UP Business Research Foundation. "Research Project on the Rural Financial Markets in the Philippines." Manila, 1981.
- Technical Board for Agricultural Credit. *A Study on the Informal Financial Markets in Three Selected Provinces of the Philippines*. Manila, 1981.
- Tidalgo, R.L. "Labor Absorption in the Philippines: 1956-73." *Philippine Economic Journal* 15 (1976): 183-237.
- _____, and E.F. Esguerra. *Philippine Employment in the Seventies*. Makati: Philippine Institute of Development Studies, 1984.
- Timmer, C.P. "The Agricultural Transformation." In *Handbook of Economics, Vol. 1*, edited by H. Chenery and T.N. Srinivasan. Amsterdam: North Holland, 1988.

- Tolentino, B.J. "Thirty-Three Facts About Philippine Agricultural Credit." *Journal of Philippine Development* 15 (1988): 245-55.
- Wangwacharakul, V. "Direct and Indirect Impact of the New Cropping Systems Technology and Irrigation in a Community Economy: The Case of Oton and Tigbauan Municipalities, Iloilo Province, Philippines." Ph.D dissertation, University of the Philippines, 1984.
- Warriner, D. "Results of Land Reform in Asian and Latin American Countries." *Food Resource Institute Studies in Agricultural Economics, Trade and Development* 2 (1973): 115-31.
- World Bank. *Agricultural Credit*. World Bank Sector Policy Paper. Washington, D.C., 1975.
- _____. *The Philippines: Priorities and Prospects for Development*. A World Bank Country Economic Report. Washington, D.C., 1976.
- _____. *Aspects of Poverty in the Philippines: A Review and Assessment*. Report No. 2984-P17, Washington, D.C., 1980.
- _____. *Growth and Employment in Rural Thailand*. Report No. 3906, Country Programs Department. Washington, D.C., 1983.
- _____. *Philippines: A Framework for Economic Recovery*. A World Bank Country Study. Washington, D.C., 1987.
- _____. *Agricultural Diversification: Policies and Issues from East Asian Experience*. Policy and Research Series II. Agriculture and Rural Development Department. Washington, D.C., 1990.



This work is licensed under a
Creative Commons
Attribution – NonCommercial - NoDerivs 3.0 License.

To view a copy of the license please see:
<http://creativecommons.org/licenses/by-nc-nd/3.0/>

This is a download from the BLDS Digital Library on OpenDocs
<http://opendocs.ids.ac.uk/opendocs/>